EDUCATION MOVES AHEAD

EUGENE RANDOLPH SMITH

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CONSTRUCTIVE ACTIVITY IN THE KINDERGARTEN
The Park School, Baltimore

EDUCATION MOVES AHEAD

A SURVEY OF PROGRESSIVE METHODS

BY

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WITH AN INTRODUCTION BY

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INTRODUCTION

EDUCATION MOVES AHEAD is essentially a series of informal talks to parents and teachers concerning the new methods of training children for the parts they are hereafter to play in a rapidly changing world. In a few years all the people who are now conducting the works of the world, governmental, social, and industrial, will be dead. In the meantime, the works and the plays of adult life will have changed so much, that the new generation of workers and players will need different powers and capacities from those which the present generation, or any earlier one, has possessed. The present problem of the school and the home is, how to impart to the children of to-day, not only the ancient moralities, but also the new capacities and motives they are sure to need. The author sets before teachers and parents the new methods of teaching needed, and shows the kind of coöperation between schools and homes which alone can yield the desired result.

For the American public which thinks about the education of its children, the book also points out the necessity of much more expenditure of public money on the education of the children of the democracy than has been customary in American cities or towns, or is advocated to-day by many citizens who erroneously think themselves "conservative." It also tells much about the

economic or industrial results already achieved by the new and more expensive methods of education — results which demonstrate that parsimony in school expenditures is the falsest and most stupid of all economies, national, family, or individual.

One of the most valuable chapters in the book is that entitled, "The School as a Health Factor"; and one of the most interesting and convincing of its expositions is its description of the advantages of learning to read silently by the eye, rather than orally and by the ear. The child is now taught to form a mental picture of an entire word, or of a phrase, instead of recognizing its letters. The habit of rapid, silent reading should first be acquired; afterward the child may learn to spell, read aloud, and write, and will do all these things better than children brought up in the old way.

One of the author's best expositions is given in the chapter headed, "Interest and School Work." He corrects a common misapprehension of the object of exciting the interest of the child in his daily work. It is not to make that work easy, but to incite the child to hard work enjoyed. The object of exciting interest is to secure actual participation by the child in the school's intellectual activities. It is not the aim of the new education to leave the child free to do only what, in his ignorance, he pleases to do, but rather to guide him into finding delight in mental and bodily activity.

The illustrations are an important part of this book. They show how the teaching of geography, history, and natural history may be made delightful

to children through picture-work of all sorts, skilfully used in connection with maps, charts, and books of travel. In these ways children will not only learn with pleasure, but learn much more than in the old ways; and moreover, they will hold better what they learn.

The author is careful to point out that, for the successful conduct of a school by the new methods, it is necessary to use the well-known methods of competition in both the work of the children and their plays; and in no field is this competition more valuable than in the teaching of English, where competitive methods in recitation, declamation, and discussion or debate before an audience are of high value.

The book accepts the following test of good teaching and wise discipline in any school: Do the pupils prefer to be in school to being anywhere else; and do they prefer school-time to vacation?

In the chapter on "Character Formation," the author makes the following just and significant observation: "It is of the greatest importance that all those who come in contact with children shall work together to build up consistently their understanding not only of what is moral, but also of what is fine and idealistic. This cannot be done entirely by precept, but is influenced tremendously by personal example, and by the child's own experiences in formulating his own standards and those by which he and his comrades live together." Parents, teachers, and children all need to take in that doctrine.

On the whole, Mr. Smith's book ought to do much good, by increasing the coöperation of parents, schools, and the public in the physical and moral education of the children. The story of the World War and of the events since the Armistice shows that all hopes of a better social and industrial world, and particularly of peace at home or abroad, depend on the improvement and spread of popular education. *Education Moves Ahead* shows the way to the prompt improvement of that education—an important service, because educational remedies for evils or wrongs are slow at best.

CHARLES W. ELIOT

NORTHEAST HARBOR, MAINE
7 SEPTEMBER, 1923

PREFACE

THE material in this book has been used in various talks to parents and teachers. It has purposely been left informal.

The author makes no pretense of new discoveries concerning education, but tries to put in non-technical form some of the more evident tendencies in the educational world.

While the book concerns itself primarily with conditions in the United States, much that is said applies with equal force to other countries, notably in Europe. The movement there parallels with remarkable accuracy the one here. Its manifestations are, however, affiliated more often with a group, defined by religious or philosophical lines, or with the methods or systems associated with personalities.

It is hoped that this discussion may help to focus interest on the needs of our children and our schools, and may increase the coöperation between parents and those to whom they have intrusted the education of their children.

E. R. S.

EDUCATION MOVES AHEAD

A Children's Prayer

Our Father, we thy children come before thee this morning with humble hearts. We thank thee for thy mercies, and we pray that thou wilt so help us that those about us to-day may be a little happier and a little better for our influence. We ask thy guidance in all the duties and the pleasures of the day, and thy blessing when the day is done.

Amen

EDUCATION MOVES AHEAD

I

WHAT IS EDUCATION?

THERE have been many attempts to define education, ranging from a sentence to a book. The attempt to define it in a sentence or paragraph is rather a turning of phrases than a helpful analysis, while the book is likely to bury its meaning in verbiage. It may, of course, be said that the education of a child consists in training him to make the best of all his inherent possibilities, but such a statement needs elaboration.

What is the purpose in educating a child? There are evidently two factors concerned: the child, and those whose lives may be influenced by him. The purpose is to do the best possible for each of these factors, perhaps in proportion to their importance. Scientifically, it is the race that must be considered, so the major purpose becomes that of preparing each child to be of the greatest help in race progress.

This might become a cold, hard judgment, if it did not follow, as I believe the weight of evidence shows, that a man or woman is, in general, of most help in the progress of the race if he or she lives a normal life, which includes the fact that the life shall give reasonable satisfaction to the one living it.

Let us therefore say that we educate a child in order that he may be prepared to live a normally satisfactory life for himself, and may contribute his full share to the progress and betterment of mankind.

It is at this point that difficulty arises. What is necessary in order to do this? What are the best ways of working out those necessary sides of education? While much of the answer is still unsettled, some conclusions seem certain.

Education must include physical preparation for life, both for health and for physical skill. This may vary from accurate performance of the acts upon which one's very life and safety depend, to the higher types of coördination.

It must provide the fundamental preparation that will help each to earn a living. It is still a question, what of the technic of various occupations this should include. Without a doubt it must include the habits and attitudes of mind on which technical training can be based, as well as the provision of information concerning economic needs and opportunities.

It must give the child a mastery of the fundamentals of learning. This includes, above all else, a mastery of communication of thought by spoken and written word, with particular emphasis on obtaining needed information through reading. Use of the symbols and methods by which number and quantity are dealt with is only less important.

It must train him, to such an extent as is possible, in the habit of logical thinking.

Information, as such, has been overemphasized.

It is not the mind that is full of miscellaneous odds and ends that thinks most efficiently.

Information is important, but ways to get information are more important. Children should be shown how to investigate, to go to sources — nature, mankind, books — for the information needed; they should have experience in thinking about and weighing the facts discovered, in reasoning about them and coming to conclusions in regard to them; they should learn to act upon the judgments reached and to be able to express those judgments to others, in spoken and written form, definitely and effectively.

They should not, as is too often the case, be expected to learn great numbers of facts and "recite" upon them, only to forget them as soon as the immediate need has passed.

This craze for facts is well shown by the lists of questions propounded by individuals and even widely asked, as a supposed educational help, in some of the newspapers. The following questions are recent examples: —

When were the United States postal-savings banks opened?
What is the color of pomegranate seeds?
How much water is there in a strawberry?
What is the longest river in Scotland?
What were some of Douglas Fairbanks's first pictures?
Give five synonyms for "sacred."
What is the difference between Guinea and Guiana?
What is the minimum age-limit for entrance to the United States Naval Academy?

If one occasionally needs to know the answer to any such question, it is far better to look it up than

to try to remember the answers to the countless thousands of generally useless ones that could be asked. There is a limit also to the amount one can remember by rote. It is certainly foolish then to load one's mind with dissociated facts when so much that is more important could be done in the same time.

It must develop the power to appreciate and enjoy that which is beautiful and fine; to use one's leisure happily and constructively. If, as appears likely, increased use of machinery and better planning of the world's work continue to decrease the average number of hours of labor needed to provide for one's needs, the question of use of leisure time will become increasingly insistent. If it is used for more complete living, for wholesome recreation, constructive activities, and finer enjoyment through awakened appreciation, all will be well. If, instead, time hangs heavy on the hands of those who have no knowledge of how to use it, loss instead of gain is likely to result.

It must try to develop such qualities as those of initiative, originality, imagination, and leadership. There is an almost unlimited field and demand for those who have them. Even here, however, there is a doubt, for we do not really know that it is possible to do more than bring out such qualities in those who already have them.

Above all, it must build social and moral character, realizing that that which is antisocial is immoral, teaching each to do his part in coöperative living, to

be willing to bear the burdens as well as to reap the advantages of family and community life.

The various chapters combined in this book have been written in the hope of interesting the mothers and fathers of the country in the ways in which some teachers are interpreting these aims of education and are working them out in the lives of their pupils.

II

THE IMPORTANCE OF EDUCATION

THE people of the United States have been, perhaps on account of their democratic form of government, insistent on educational opportunities for all their children. Little by little that opportunity has widened and grown until free education through the high school is available almost everywhere, and college is within the reach of a constantly increasing number.

A large part of the population, however, has been satisfied with the knowledge that public education was being provided. They have never felt any personal responsibility in regard to it, nor have they been easy to convince of the need of further improvement and consequent further expenditure. It is a well-known fact that an increase in school taxes is usually resisted violently.

Some show their scant appreciation of education by their eagerness to start their children at work as soon as they pass the legal school-exemption age. Thousands of parents, in all kinds of homes, prove that they fail to realize that school is the all-important business of their children by their unwillingness to inconvenience themselves for the sake of the habits the school is trying to establish. They keep their children from

school on the slightest pretext — the mother needs the child, the father wishes to have an extra week-end day in the country, or whatever it may be. Punctuality is of slight importance if the parents wish their breakfast later than is possible without infringing on school hours, or if an errand must be done in the morning. More than all else is their carelessness in interrupting study again and again (even while they blame the school for not "teaching concentration") to have children do minor tasks that serve only to convenience slightly other members of the family.

Neither, unfortunately, do parents as a whole show an attitude toward school life that dignifies it in the eyes of their children.

There are even those who say that the limit of expenditure for education has been reached, and that improvement, if improvement comes, must come entirely in better value for the money expended.

And this despite the fact that the nation spends many times more for minor luxuries than it does for its schools. For example, it is estimated that in 1920 candy cost the nation as much as its entire bill for education, tobacco cost twice as much, even soft drinks cost one third as much, while all luxuries combined cost about *seventeen times as much!* It is also despite the fact that education has turned back to the world, a thousand times over, all that has been put into it. What of the incalculable value of nature's forces and wealth that science is opening up? What of the return from better farming, from the

increasing use of machines, from all the activities that depend, as all do, on trained men and women?

Better return for our money is an excellent goal, but let it not be accompanied by niggardliness in withholding from education even that tithe of her production that is due her!

Evidently, up to this time the average citizen has not become an enlightened, determined and self-sacrificing advocate of superior education. He does know, theoretically, that it is a desirable thing. He quite seriously wishes his own children to be well educated, but to recognize lack of education as a national menace, to realize that a breakdown in our educational system would be as disastrous as a losing war, to see a setback to civilization itself, a catastrophe of overwhelming proportions, in any faltering in this tremendous machine — that is still beyond him.

The reasons why we cannot sense the magnitude and importance of education are many. But this perhaps is the dominant one.

We cannot see an immediate material return for the expenditure of effort and money put into it. In any business undertaking, if a new machine can take the place of an old one with increased efficiency and earning power, the old machine is scrapped without compunction. The extra cost is justified because it is "good business." Yet a board of education one spring actually refused to buy a lawn-mower to keep the school grounds in order on the plea that lawn-mowers were cheaper in the fall. That is a fair sample of much of

the unbusinesslike reasoning concerning school matters, whether of equipment or of personnel.

It is true the dividends from an investment in schools are sometimes deferred, but they are always cumulative.

What chance do you suppose a country without efficient education will have in the economic struggles of the rest of this century? What will happen to the town or city whose schools fall below the efficiency of those in competing communities? The answer is obvious.

As a matter of fact, there is even an immediate material return — an actual dollar-and-cent return. It comes, if education is really sound, through a more enlightened citizenship, a better administration of public and private business, more effective publicity and better conditions to justify it, a higher average of earning power, less expenditure for jails, almshouses, and other such institutions — in fact, in a better community, industrially as well as humanly.

Just consider for a moment the colossal folly of building up great and wealthy communities with paving- and sewer- and water-systems, with telephones, gas, electricity, and street cars, with towering buildings and the business and manufacturing they house, with communications by land and water, perhaps even by air, and yet failing to train in the most efficient way possible those who must manage it all!

If you owned a business the management of which you must give up one year from to-day, what would you do during the coming year? Wouldn't you bend

every energy toward preparing a capable successor to carry it on? Would you spare time or effort or money in that attempt? Of course you would n't. You could n't afford to.

We own this United States of ours, and soon, painfully soon, we all shall have completely stepped out from its management — from our personal affairs as well as from those of greater importance. We shall be gone, our only influence that which survives after we are dead.

Stop and think for a moment: *Not one single brain of all those directing human activities to-day will be here in a few years.*

But there is one saving factor. We know we are going; we know who are to step into our places; we can, if we will, prepare them to achieve far beyond what we are doing.

Can we afford to? *We can't afford not to.*

Will it pay? Yes, a thousand times. Yes, even in our own lifetime, when the initiates are only getting ready; but in the future, to civilization, to the human race, who shall measure what it means? While against it there stands only an unwillingness to meet the issue, a weak postponement of action, or a "penny wise and pound foolish" policy that we should have outgrown long ago.

Let us throw off our lethargy and demand a practical, constructive improvement in educational opportunity that will rapidly bring about a condition where all the children of all the people will be able to have the best education that experts can plan.

III

CHANGING DEMANDS ON THE SCHOOL

DURING the last few generations the demands of the community on the school have multiplied almost beyond recognition.

In earlier times many of the almost unrecognized needs of childhood were met automatically, though more or less crudely, by the conditions under which people lived. On the farms, in the towns, even in cities of fair size, the family had a large measure of self-dependence. Production was not so highly specialized as it has since become, and both mother and father took an active part in home duties. So the children, some from interest, others from necessity, had a part in these same activities. The boy helped his father or the "hired man" make minor repairs in wood or metal, and then played havoc with the tools, building boats and cannon and sleds. The girl, and perhaps her brother, helped with the housework, from wiping dishes to dusting the bric-à-brac. The garden, chickens, sometimes a cow, provided a foundation for nature study, which fields and streams and the family fruit-jars, filled with pollywogs and snails, carried on.

Play, too, was provided for. Open fields were common. The primitive instincts, such as those for

climbing, hunting, collecting, and competing, had much opportunity for natural expression. The school, therefore, was merely a place to which children were sent to learn the three R's.

But now the increased massing of the people in cities has deprived the child of much of his birthright. There is no woodshed in which the boy can tinker, not much enthusiasm or chance for gardens, too often no opportunity or need for the children to help about the house. The only city play-spots are likely to be in unsanitary streets in constant danger from passing vehicles, or occasionally in a park that may be inconveniently located or inadequately equipped.

Then, too, the crowded lives of our men and women leave the parents a continually decreasing amount of time to really live with their children, so the development of the social and moral virtues that come rather from example and from being lived than from any amount of precept is being more and more left to the school.

On the other hand, while the home has been giving up these sides of the child's training, conditions have also greatly increased the information that children must have in order to be even reasonably in touch with the world's activities. Discoveries and inventions have been multiplied at an unprecedented rate, and one who does not have at least a fair acquaintance with them is woefully ignorant.

In vocabulary alone the increase is astounding. The early dictionaries contained from eight to fifteen

thousand words. The latest ones are little short of half a million.

Again, increasing use of machinery is enabling mankind to supply its needs with fewer hours of labor, and is therefore leaving more hours free from scheduled work. If there is no preparation for the constructive — or at least harmless — use of this free time, many of those who have no resources within themselves will become dissatisfied, perhaps even vicious. The love of nature, appreciation of art, music, and literature, enjoyment in constructive activity with tools or in the garden, pleasure in physical recreation, all can help to meet this need. So even machinery is creating a new and insistent demand on the schools.

But the greatest duty of all is that of preparing for intelligent and helpful living in a community. To-day the world stands practically committed to democracy. When our boys and girls reach the voting-age they are supposed to be able to assume the duties of citizenship and to meet them conscientiously and wisely. The school must therefore develop community thinking and community responsibility.

When we consider the army of those who indirectly work for even the most humble of us, providing our food, our clothing, our shelter, and all the necessities and luxuries that go to make our daily lives, we begin to realize how interlaced, how impossible of separation, the interests of all of us are.

Trace in imagination the progress of one thing,

the suit you wear, the meat on your table, the pencil with which you write — and visualize the number of those upon whom your possession of it has depended. Others also depend in one way or another on you, and the common existence of all depends on each one's realizing that interdependence and assuming the responsibilities as well as the rights that are bound up in it.

The school, therefore, must become the smaller community, the practice-community if you will, where justice and consideration, self-reliance, and true responsibility — even democracy itself — are built into the characters of the children.

So the school cannot be merely a place where subjects are taught. Necessity has added to it play and handwork, household activities, preparation for leisure time and for citizenship. It must allow the expression of the primitive instincts of the race and must form them for the future. More and more its executives and teachers must think in terms of developing manhood and womanhood with the intricate mesh of qualities that underlie them, rather than in terms of pages and facts.

But the school must do still more. To be really vital it must touch and serve the life of the community. Some schools are so influencing the families of their pupils that the whole life of the neighborhood is being bettered. Certain rural schools find their fields in improving farming methods. Others in both city and country are bringing to their constituents music or art or literature for appreciation and study.

The Viking Ship

Reproducing the Homes of Lake Dwellers

The Unquowa School, Bridgeport, Conn.

Still others are making their contributions through the extension of study-privileges to those who spend the usual school-hours in earning their living, or by contributing to the progress of education itself.

The school, therefore, is looming larger and larger in the make-up of our communities. No other agency can be comparable to it in its continuous influence on our people. One may stay away from church or never attend a theatre or see a moving picture, but the law demands that all native-born future citizens shall pass through the hands of the school. When that law is perfectly executed, and schooling for all immigrants also becomes a part of our system, then if the people are willing to support the right kind of schools we shall see the future formed and moulded before our eyes.

IV

THE SCHOOL AS A HEALTH FACTOR

THERE has begun to be an awakening concerning the physical needs of our people. The story of the draft examinations, with about half of the young men showing defects and over thirty per cent refused because the defects were serious enough to lessen their value as soldiers, has had a wide influence. The results of searching examinations given children in various schools is confirming the belief of physicians that much of the adult physical wastage is preventable. That it is a good investment to prevent it is beyond question. Considered economically alone, the annual loss in man and woman power due to preventable sickness is a staggering total; add to that the sorrow and suffering involved, and to allow it becomes even more inexcusable.

The family physician does not seem to hold the solution to the problem. He is called in usually because of a definite illness. In diagnosing and curing that illness he may find other conditions that require attention and therefore may do actual preventive work. But the percentage of cases in which he makes a really complete examination, or in which he is equipped to make such an examination, is small.

The schools are the only places where all the children of the country are brought together and where it is feasible completely to survey and care for them physically.

As conditions stand to-day, school examinations range all the way from no examination — or perhaps the more dangerous supposed examination that takes but a few seconds — to a complete investigation of the child's condition. A complete investigation includes testing the major organs, examining the throat, mouth, eyes, and ears, the feet and the spine. There are blood tests and urine analyses; in fact, nothing is left to chance. When defects are discovered they are usually reported to the parents for treatment by the family physician or a specialist. Some are likely to be cared for at school, particularly minor posture-defects.

There need be no idea that such examinations are necessary only for the poorer section of the population. The children supposedly best cared for will often show a good percentage of cases needing attention. Such children are often undernourished, not from lack of food, but from poor choice. Lack of muscle-tone, anæmia, defects of feet, spine, ears, and eyes, are no respecters of persons, and they are present to a surprising degree in the children whose parents would be most likely to scoff at such possibilities.

Another factor in the preventive side of the school's work is related to its building and equipment. Here too, recent years have seen very great

advances, and more and more thought is being given to the conditions under which children are to live while in school.

For example, the study and care that is now being given to the lighting and ventilation of schoolrooms is probably greater than that given similar problems in any other kind of buildings. The facts that schoolroom windows should reach as nearly as possible to the ceiling, that they should not approach too near the front wall of a classroom, that they should be arranged in solid banks with as little unlighted space between the windows as possible, are examples of this thought. The formulas for the amount of window-space in a room and the possible width of the classroom that will still allow the light to be distributed efficiently are no longer guesswork.

One school recently, in determining the orientation of the building so as to give the classrooms the best light when the children were studying, conducted an experiment that for thoroughness is probably the most complete ever made. A model classroom with windows where they would be in the real building was placed on a rotating circular platform that was in turn on a second platform, also rotating. The sun was represented by a searchlight that was fixed in direction but movable in elevation. It was therefore possible to place the sun at the right elevation for any hour of any day of the year, to move the outer platform so that the direction of the sun in relation to it was also correct, and then to try various orien-

A Well-Lighted and Well-Ventilated School Building
Part of the Park School, Baltimore

tations of the room to see what conditions would exist in regard to the sunlight. As the room was so made that papers could be placed inside of it covering the floor and walls, it was possible — by marking the boundary between the light and shadows for any position — to keep a permanent record of what would happen in an actual schoolroom.

After a complete investigation with this model the school determined on the orientation of its building that would best fit its latitude and the other local conditions.

Equal thought is being given the question of temperatures, humidity of the air, ventilation, and the related problems. Very many school executives and school architects have become convinced that ventilating systems are less satisfactory than a window system of a kind that can be used without drafts but with a maximum of out-door air coming in at its outside temperature. Some schools use no heat. Others heat their rooms but never allow the windows to be closed while the children are present. The author's experience has been that the rooms that are cool and fresh give all the health advantages of cold rooms without the disadvantages that must come when the children are clothed to stand extreme outside temperatures. Elementary school rooms kept, during the winter, at about fifty-five degrees by a combination of window ventilation and ample heat, seem to satisfy this requirement.

School furniture, too, is receiving most careful attention. Posture defects are so easy to start, so

dangerous in their possibilities, and so difficult to eliminate, that much time and expense are justified if they lessen the likelihood of such weaknesses.

There is now a very marked tendency toward movable furniture and toward much freedom in its use. The best models are designed to fit the body, the advice of posture experts being followed by the manufacturers. Some even have adjustable backs. It goes without saying, of course, that each child in the school should be fitted with a chair and desk suited to his size. Any other condition is archaic.

The question of other details that are being worked out to better health conditions could be expanded almost indefinitely. The important fact, however, is that expert school men and their medical advisers are considering every detail with the thought of its effect on the child, and that there is, therefore, less and less direct danger from contagion, bad posture-habits, poor ventilation, eyestrain, and other such causes.

Perhaps one of the greatest advances is in making the school a place of less nervous strain. There seems no question that in the past many children have suffered a definite setback during the school months. Despite the various theories of why children grow at one time of the year and fail to gain at another, there are enough definite cases where gain has at once followed removal from school or transfer to a school of a different type, to prove that the nervous condition of a child under strain does affect growth and generally injure physical condition. The

child who is continually repressed, who is always kept quiet, who is never allowed to move, is affected adversely. A boy about twelve years old sat by the school window and against orders looked out at the passers-by. When he reached home he said to his mother, "When I saw a woman going by I thought to myself, 'What would you do if you were made to sit in a seat all day long and never were allowed to move? I don't believe you could do it.'" And the boy was right. That children cannot do it with impunity has been shown by tests that found nervous reaction in most children after very short periods of enforced quiet.

On the other hand, a happy school-child, enjoying reasonable freedom, enthusiastic over the work and play of the day, is in the best possible environment in which to grow and become strong.

But the work of the school in preventing defects is still only the negative side of the story. There is a positive side fully as hopeful in its promise for the future.

Unfortunately, crowded community conditions have been more and more eliminating children's opportunity for physical recreation — the play that is the greatest factor in giving them sound, strong bodies, quickly responsive to their wills. As a corollary to their loss of play-space there has been a loss of time spent in the open air and an increase of time spent in dwelling-places, more often than not overheated and poorly ventilated. The schools are trying not only to make up this loss sustained by the

children, but to add a more complete and better play than has been available in the past.

The first attempts of schools to give children exercise were forced by a realization that the pupils became nervously and mentally fatigued in school to a degree that made them inefficient. These attempts often failed of their purpose to a greater or less extent, because they were gymnastic in character, and called for a minimum of pleasure-stimulation and a maximum of attention. They therefore did not greatly lessen fatigue, although they did add an element of activity, gave a changed direction to attention, and sometimes served as an excuse for the opening of the windows and the introduction of some fresh air.

I have known a teacher to occupy the short gymnastic period required of her by playing a game with the children, where they put their hands and arms in various positions on order and she attempted to catch them napping. The amount of exercise given was so small as to be negligible while the strain on attention was very great. The children seemed to finish their recreation period more tired than when they began it.

Those who have studied the effect of various forms of exercise are now quite generally united in the belief that the major part of physical recreation should be games and free play. Without question it should be as enjoyable as possible. To as great an extent as possible also it should be out of doors, almost irrespective of the weather, and when not

outside, it should at least be in thoroughly ventilated, cool rooms.

This emphasis on play is one of the chief reasons for the "country day school" movement that is sweeping the private schools of this country. The boarding schools have long had the monopoly of real country surroundings with ample playgrounds and an entire day spent at the school. The new type of school has similar conditions within reach of the city, but while its pupils spend most of the day at school, they return home late in the afternoon and consequently have the advantages of family life without being deprived of the play they need.

Fortunately this need is also being recognized by the public schools, and different ways of giving similar play advantages are being urged and to an increasing extent are being tried. The great deterrent is expense, but even that cannot stand in the way if the need becomes sufficiently understood.

One expedient is that of putting the schools on the outskirts of the city instead of in the more settled sections. The theory is that it is just as easy to go out as to come in — perhaps it is easier, as the school travel is then opposite to the "rush-hour" traffic; that the somewhat longer average trip is of small importance compared with the advantages gained; that land is cheap enough and in little enough demand in such sections so that the buying of large school-grounds is justified.

Another way consists in locating the schools adjacent to, or inside of, the city parks. Public athletic

fields and playgrounds can then be used by the pupils without extra expenditure for the land.

Where conditions are too congested even for these suggestions, there are still possibilities in the roofs. The flat tops of many of the larger city buildings are waste spaces. With some expense for surfacing and enclosing in netting they might well meet the needs of the children. This last suggestion seems never to have been given an adequate trial on a large scale, so real roof athletic-fields are yet in the future.

Whatever the solutions prove to be, — for there will be many, depending on local conditions, — the fact remains that the schools must provide plenty of opportunity for free play or else fail in the constructive side of their physical program. The more quickly the public recognizes this and not only backs the schools that are giving it but demands that all give it, the better will be the results.

In the handling of play too there is coming a shifting of emphasis, brought about by a broader outlook and made possible by the larger playing-fields so many schools are acquiring. The older type of school athletics stressed school teams, and sometimes even now a school's reputation depends as much on its athletic prowess as on any other factor. This of course, if carried to an extreme, means that a small percentage of the pupils probably overdo the athletics while the majority fail to receive adequate attention — if they are not left entirely on the side lines. The ideal to-day is to have every pupil engaged in physical recreation some part of each day, and many schools

are approximating this condition. It emphasizes competition among pupils of the same school with teams of every size and every degree of skill, rather than one "all star" team toward which the whole energy of the school is bent.

There are many interesting possibilities in this kind of play and it can be made as competitive as seems wise. One worth-while type of activity is that of entirely free play. It consists of attempting "stunts" on the playground apparatus and trying athletic events individually or in small groups without coaching, such, for example, as throwing weights or the javelin, trying different kinds of jumping and so forth, of playing tag and other such games, of skating or sliding or skiing, or of getting up matches in any sport by choosing sides. It in fact includes any kind of athletic play that springs up more or less spontaneously if conditions are right for it.

Then there is the more organized play. A simple way to encourage this is to divide the pupils of a school into two or more groups that compete with each other. If each child in the school belongs to one group, and competitions fitted to every age and size are carried on in various kinds of sports chosen for their constructive influence, such a program will serve many useful purposes.

Again, insignia may be given to those attaining certain levels of achievement in standardized tests of strength, speed, agility, and endurance, and in this way even the poorest may be given an attainable goal and an incentive for working toward it.

Then too the help of the stronger in raising the standard of the weaker can be secured through "average contests" in which the competition is not between individuals, but between the average performances of groups. A good example would be a contest between the average standing-broad-jumps of two classes of the same age. Such a contest, if planned ahead of time, is certain to start all the pupils practising broad-jumping, and to make those who do it well teach the poorer ones, whose jumps will count equally with their own in determining the result.

Schools using these and similar methods, and those that send teams of all sizes and degrees of skill to compete against other schools, are almost certain also to develop "first teams" in the various sports. Under such conditions first teams are very much more likely to be a natural outgrowth of development and ambition and are less likely to be artificially and almost professionally built up. While such teams seem to justify their existence as a stimulus to ambition, there seems to be little doubt that the future of constructive physical training in our schools depends upon general participation in games rather than on specialization in athletics.

The subject of play and athletics should not be left without a word concerning its other values. Its results in rapid coördination as well as in physical condition were shown in the success of athletes in aviation. Some of those in charge of this branch of the service in the recent war have been definite in

saying that the best candidates for the flying corps came from the young men of athletic experience.

Again, physical recreation is almost certain to supply a lasting interest in exercise of some kind, and therefore to influence for the better the child's adult life.

But perhaps the greatest values that come from the playground are the social and moral ones: social adaptation, open-mindedness to the viewpoints of others, ability to win without boasting, to lose without rancor, to put team play above individual triumph, coöperation above selfishness. If, as has been said, England's battles are won on her athletic fields, it is equally certain that America's citizens are being prepared on her school playgrounds.

V

"IT WASN'T DONE THAT WAY WHEN I WAS A CHILD"

ANY teacher whose methods are even approximately modern is likely to have heard this cry many times. Strangely enough, it is not, as one might suppose, an appreciation of progress. It is rather the last word in utter condemnation.

If the teacher replies that every activity of life is changing, that automobiles, airplanes, and thousands of other — I had almost said — "necessities" are of recent development, it often only serves to bring out the list of iniquities of which the school is guilty.

The complaint of the mother is likely to be: "My little girl is *reading*, and she can't spell a word! Why, she doesn't even know her letters! When I was a girl we learned our letters so we knew them forward and backward before we even *began* reading. How *can* anyone read without even knowing the letters? I was one of the best spellers in my class, and I don't see how Mary is even going to be able to look up a word in the dictionary!"

The teacher's attempt to explain about "word method" or "sentence method" often falls on deaf

ears, and the mother goes away shaking her head, fearful that her child will be permanently handicapped by such teaching.

The father, as befits a wage-earner, is more likely to complain about arithmetic. From the man who can barely figure his due for overtime to the one who was a "crack mathematician when he was in college," they question the "newfangled" ways of dealing with numbers.

It all results from trying to help Johnny with his lessons. Despite the warnings of schools, despite their own grumbling about doing the school's work at home, parents as a class do delight in helping their children with their lessons. Whether it comes from the pleasure of watching the opening up of a human mind, — always a fascination, — or the desire to push Johnny along a little faster than the neighbor's boy can go, or just the natural wish of the parents to give and obtain every advantage for one they love, is immaterial. The fact remains that parents do try to help.

So father starts an example with Johnny, and Johnny does n't put it down the way father would, he does n't subtract the same way, he may even multiply backward. Is it any wonder that father criticizes and Johnny defends himself for doing it the way he was taught, and the evening is entirely spoiled?

Sometimes the complaint, from either parent, concerns the less formal ways of learning that are being increasingly used. The "grown-ups" pull long faces

and deplore the loss of the old drill (which they cordially hated when it was applied to themselves!) and fear that the coming generation will not be well grounded in the fundamentals and will never have had the experience of "being made to do really disagreeable tasks."

It goes to prove that education is not yet recognized as a profession. The intelligent layman would hesitate to tell a physician how to diagnose or to treat a case of sickness. Witness the sigh of relief that comes from a household when the summoned doctor arrives. Neither would the average man direct a lawyer how to handle the intricacies of a case in court.

But where is the man or woman so humble as not to know more about his or her child and his upbringing than any teacher or school? All of us have attended school, we know many teachers, and don't think too highly — more's the pity — of some of them, our children go to school and tell us all about it (even though what they tell is unintentionally inaccurate to an unbelievable degree), some of us have even taught, if no more than by giving a few lectures in law or medical or business school. So, of course, as it is all so simple and plain to see, we can, with perfect confidence in our infallibility, say, "Well, it was n't done that way when *I* was a child."

I should be the last to discourage the parents' interest in the details of the work of the school, or to decry honest, intelligent, constructive criticism. It is a truism to say that it is only by the backing and

The Maypole Dance

The Milkmaids' Dance

TWO SCENES FROM AN OLD ENGLISH MAY DAY

The Park School, Baltimore

coöperation of the home that the school can exist. Parents should recognize, however, that education is a most intricate and difficult profession. There has begun to be a science of teaching, and men and women are devoting their lives to its study. It deals with human beings, no two just alike and the same individual changing from day to day, with a world whose conditions are constantly varying, with changing demands, and changing ideals. Not only is there the experience of the past to affect its methods, but experimenters in considerable numbers have been and are now at work, trying this method and that, comparing results, searching out weaknesses, improving the technic of teaching, broadening its scope, defining its aims. Educational magazines by the score, books by the hundreds bring their material, contributions from experience and from laboratory experiments, from practice and from theory, for the busy teacher to assimilate and to use where it can strengthen her work. It is not too much to say that no one who is not making a life-work of teaching can really be in full touch with its progress, and, as a matter of fact, the pace of improvement is too fast even for many of those who are!

This means that the mere fact of being a father or mother cannot automatically qualify one as an expert on children — on either their feeding, their schooling, or any other side of their upbringing. In fact, the parent has one decided handicap. In any normal childhood there are many interesting and wonderful occurrences, some full of possibilities for

good, others less welcome. It is difficult, meeting these incidents and events in the family environment, to have the same perspective that comes to a teacher who may have seen the same reactions and stages of development hundreds, if not thousands, of times.

The moral of all of this is twofold: that parents should be particularly open-minded toward changes and developments in this field, and that education should take the public into its confidence from time to time concerning the more evident changes that so naturally puzzle those whose children are affected by them. Such a policy of mutual confidence would give parents a fair basis for judging whether the schools to which they confide their children are living up to their opportunities, and would ensure better understanding and coöperation in educational progress. It is in the hope of adding to this understanding that I shall discuss briefly the questions already raised concerning reading and arithmetic.

READING

Few, even of the best-informed teachers, realize the tremendous importance of reading, or how poorly it has been taught. In school, textbooks — the condensed information on each field — must of course be read. But all through life the sources of our information about the past, about the experiences of others in our own lines of work, about present developments in every kind of endeavor, about the daily occurrences of the world, are in the printed page. In fact,

commerce, industry, practically all human activities are dependent to a great degree on interchange of thought through print or writing.

If it could be known how many pupils fail in various subjects in school and college, not from any weakness in those particular subjects, but because they cannot read readily and rapidly, it would shock both parents and teachers. The boy whose geography or history — sometimes even arithmetic — is always lagging behind the work of the class may have so much lower reading-speed than he should have that he is hopelessly handicapped in trying to keep up. If there is much class discussion such a pupil may struggle along for a while, but if a teacher depends on assigned study, sooner or later he will drop back. So with adults: those who on account of their slowness in reading read only the daily papers, — and much of them by the headlines, — those who waste time over the morning's mail, or find their trade journals too heavy to wade through, those to whom any but the lightest reading, liberally illustrated, is a burden, are all likely to be suffering from this same weakness.

Experiments have shown that the great dangers in teaching good reading (by "good reading" is meant the ability to recognize rapidly what is expressed in print or writing, without needing to use conscious attention on the technic of reading instead of on the matter read) are:

Too early attention to the alphabet, phonics, or any other kind of analysis of words.

Oral reading of new matter, after the child begins to acquire silent-reading speed.

Too little silent reading of interesting material. This is likely to be a result if adults read to the child to any great extent.

Of course you see that, if this statement is true, the former methods of teaching reading were surprisingly efficient examples of how not to teach one to read! Such a statement demands conclusive proof, and fortunately that proof is available.

Moving pictures taken of the eye while reading [1] show that reading is largely a matter of eye-habits; in particular, that: —

1. The eye does not move smoothly across the page, but moves in jumps or steps, pausing at the end of each step long enough to see the next part of the line being read. For example, a re|ader's ey|e might pause on ea|ch of the pla|ces marke|d in this sentence.

2. Poor readers take short eye-steps, good readers long eye-steps. For example: a good silent reader read the following line, on the first reading: — [2]

everything possible for his comfort and for the as-

and on the second reading: —

everything possible for his comfort and for the as-

[1] *Educational Monographs*, vol. I, No. 5, and vol. II, No. 4; University of Chicago Press.

Silent Reading, by O'Brien; The Macmillan Company.

[2] From *Reading: Its Nature and Development*, by Dr. Charles Hubbard Judd; University of Chicago Press.

A poor reader read it the first time: —

2 1 3 4 5 6 7 8 9
every|thing poss|ible f|or |his |comf|ort and f|or the as-

and the second time: —

1 2 3 4 5 6 7 8 9
everyth|ing pos|sibl|e fo|r his |com|fort and f|or| the |as-

The one who made the first two silent readings shown above read it orally: —

1 2 3 4 5 6 7 8
every|thing poss|ible f|or his| com|fort a|nd f|or t|he as-

The poor reader shows wrong eye-habits not only in short steps, but in the uncertainty that forces the eye to go back for another look. This is shown where the numbers on the pauses are not in correct order.

3. Poor readers have not been proved to make longer pauses at the end of each step, but their totals of pauses are much larger and their reading is therefore much slower.

The total eye-pauses in each of the preceding five examples amounted, in fiftieths of a second, to: —

First good silent reading	$1\frac{14}{50}$ sec.
Second reading	$1\frac{8}{50}$ sec.
First poor silent reading	$2\frac{7}{50}$ sec.
Second reading	$2\frac{39}{50}$ sec.
Oral reading	$2\frac{39}{50}$ sec.

Such differences mean, in actual experience, an intolerable handicap for the poor reader. Suppose a high school expects a pupil to study at home, as many of them do, between two and three hours daily. If this is calculated for the child of good reading-

speed, and the poorer reader, as in the example quoted, takes about twice as long to read the material (and probably even more to fix it in mind, as will be shown later), it means that from four to six hours daily would be needed. The alternatives are unprepared lessons, or injured health.

Or to put it in terms of business: Is the competent executive the one who glances over a contract or other paper, sees its salient factors instantly and so can decide quickly, or the one who has to read it several times before he even grasps its bearing? I do not ignore the possible difference of ability in two such men; I am simply pointing out a possible defect that may so handicap one of two men of equal ability as to make him less likely to succeed.

4. Oral reading steps are shorter and pauses are in general longer than for silent reading. This is because the slowness of the tongue holds back the eye.

The example already given shows this condition.

Based on such experiments as this, the teaching of reading is now by the word, phrase, or sentence method, which, simply stated, means that the child is taught to form a mental picture of an entire word or phrase, instead of — as formerly — being taught to recognize a word by the letters in it. I believe that such methods might all be called, if a name must be used, the *picture method.*

No one, meeting a friend on the street, stops to analyze the features, saying: "He has blue eyes, light hair, a cleft chin, and so on, so he must be Mr. A ——"! On the contrary, if the image fits the

mental picture of Mr. A —— as it previously has been formed, there is immediate recognition. As a matter of fact, how many of your own intimate acquaintances can you describe in detail?

In the same way the child beginning to read can be given a gallery of word- and phrase-pictures that he will instantly recognize again when they occur in his reading. There are many ways of helping to accomplish this, but as they are details of teaching-technic, they will not be considered here.

The child who knows the alphabet is, then, handicapped in learning to read, and will be handicapped for life if poor eye-habits are formed on account of this knowledge. The one who recognizes *in* immediately has an advantage over the one who must see *i* and *n*; the one who can see and recognize *in the* as a unit has a still greater advantage, while the pupil to whom *in the house* or *in the woods* is one reading-step has another gain in reading-efficiency.

A western educator tells the story of one class in a school system that was, by fault of a new teacher, started on the alphabet in commencing reading. Before the end of the first year this was discovered, and every effort was made to correct the pupils' reading habits. In the fourth year this class was still much the poorest reading-class in the city despite all the school had been able to do in the meantime in its effort to correct its poor eye-habits.

"But," you may ask, "may our children not learn the alphabet at all? How can they spell correctly?"

Certainly they may, *after the eye habits are started*

correctly. The alphabet, spelling, writing, phonics, — which is simply word-analysis by sounds and is particularly used for the purpose of working out new words, — all become a part of the children's study. Intelligently used, they will not harm the habits that have been started. Overdone too early, especially by the parent who is distressed over a child's inability to spell, they may cause serious harm.

Do not worry about spelling. It may be postponed even to an extreme, and yet come out satisfactorily. The teaching of spelling, which there is not space to take up here, has never been done so well as now, and — even if you do find it hard to believe — children have never been as good spellers as they are now!

The harmful influence of oral reading on silent reading is easy to explain. If a child has reached a point where eye recognition is more rapid than the ability to enunciate, that child will begin to read poorly orally if the material read is at all interesting. His eye and his mind will go along at silent-reading speed, while his tongue stumbles along behind, *repeating, not what the eye is reading, but what is remembered of the words read a moment before.* Small wonder that words are mispronounced, or even replaced by other words, and that expression is absent. But the remedy is not, as the prescription used to be, more practice in oral reading; it is to stop oral reading entirely as reading-practice. If this is not done, but the conscientious mother or teacher drills the child, stopping him and making

him reread for all mistakes, the eye finally may become discouraged and settle down to the speed of the tongue, and the result will be a permanent loss of reading-speed.

In testing pupils, even in grammar grades and high school, investigators find many individuals who have only one way of reading — the oral way. The limit of speed is often below one hundred and fifty words a minute, and the habit of oral reading is so established that every word is fully pronounced mentally, if not vocally. Such pupils often cannot succeed well in school work, and reading will always be a slow, laborious process for them, unless they go through the very difficult undertaking of correcting this condition.

Only a short time ago a mother remarked that her daughter's school had asked to have her twelve-year-old child read aloud to her daily during the summer vacation. An inquirer who asked the reason was told that the child was a very poor reader. The answer was that it was almost certain that the child was too good a reader for the teacher's purpose; and so it proved, for she could read silently at about double her oral speed, and consequently was overrunning her tongue and stumbling badly. The remedy suggested might have improved her oral reading, but if so, would have accomplished it by the sacrifice of the tremendously important advantage of her rapid silent reading.

The ability to read well orally is, however, a pleasant accomplishment, and the oral use of words

in school is necessary for checking pronunciation. Both these aims are met by much use of oral composition, public speaking, and reading aloud interesting material that a pupil has read for himself and considers important enough to bring to the class as a contribution to its work. The purpose in all this, or in occasional class-reading of some particularly worthwhile book, is to give information and pleasure to others. There is not the same temptation to run ahead of the tongue, and the oral reading is not done to an extent that can form bad habits.

Being read to by others may work harm if it does either of two things: —

Lessens the amount the child will read to himself;

Makes it easier to get information through the ear than through the eye.

Much reading-practice is needed before reading itself ceases to occupy much of the attention and the mind can concentrate on the meaning of what is read. Anything interfering with that practice is detrimental.

Some time ago it was reported that a pupil in the year before high school appeared unable to accomplish her work, although she was very conscientious, and mental tests had shown her to be normal. Examinations of her ability to understand what she was studying showed that she must read each paragraph over and over again before she understood its content, but that she was alert and intelligent in class discussions. Further tests showed that the paragraph she must read over and over again to understand was

grasped the first time it was read to her. Inquiry then disclosed the fact that her father had read her books and her lessons to her for years, and in so doing had trained her ear as a source of information, while her eye, having no such practice, was almost helpless as an avenue for learning. Despite very careful efforts made to overcome this defect, the girl was handicapped seriously.

A natural question is, "Why can any of us who were taught by the old methods read well?" The answer is that great numbers can't! My own tests of adults have shown reading-speeds from about one hundred and forty words to over eight hundred words a minute. Those who, although taught slow eye-habits, yet can read rapidly now have taught themselves by silent-reading practice, and have overcome the wrong eye-habits that were started by the school. This was usually done, I believe, by much silent reading at home when oral reading was being taken in school.

One other point: Do not think that slow readers understand better and remember longer. The contrary is more likely to be true. In general, it is the reader who spends no appreciable time on the mechanical process of reading, whose whole mind is on the content, who gets the information most readily. This does not, of course, take into account pauses for consideration and thought, where the text opens up such possibilities, nor does it consider marked differences in native ability.

This explanation will, I hope, make it clear that

the changed method of teaching reading is not a fad, but is founded on research and logic. It depends, not on opinion, but on scientific experiment. There is every reason to believe that the newer ways are fundamentally correct, and that the present-day children will be much better readers than their parents were.

ARITHMETIC

In this subject I shall touch on but two topics, subtraction and multiplication. They are two of the fundamental processes about which any educated person would supposedly be informed, yet they, as well as reading, have surprises in store.

Every mathematical-association committee of which I have found record, that within the last twenty years or so has considered ways of subtracting, has reported against the former methods of teaching and using this operation.

Most of us were taught to "borrow" when subtracting a larger digit from a smaller. For example, in 92 – 37 the pupil was told to borrow 1 from the 9, making 12, to take 7 from this 12, leaving **5**, and then to subtract 3 from the 8 remaining from the 9, leaving **5**.

The new method says: "What must be added to 7 to make the next higher 2?" **5** must be added, and as this makes 12, there is one to carry — as in addition — to the 3, making 4. "What must be added to 4 to make 9?" **5**; so the answer is 55.

This method is usually spoken of as the "shop

method," from its likeness to making change, or the Austrian method. It will be easier to understand if it is considered in various types.

When a child is learning to add, there are forty-five number-combinations, such as 1 + 3 = 4, 7 + 8 = 15, 2 + 2 = 4, that he must master in order to add readily. Any weakness in these combinations is certain to show later on in his arithmetic. The good teacher uses them not only in the form "7 + 8 = what?," but also "7 + what = 15?" and "What + 8 = 15?" so that the coupling of 7 and 8 to make 15 becomes an immediate association.

But this reversed addition is subtraction; and without learning new terms, without a struggle with a new subject, the child naturally begins to subtract one-digit numbers.

This same simplicity of approach and use holds as long as the digits subtracted are not larger than the ones from which they are taken. $\begin{array}{r} 79 \\ 34 \\ \hline 45 \end{array}$ would be done by saying "4 and **5** would make 9, 3 and **4** would make 7, so the answer is 45.

When examples are met that would necessitate "borrowing" by the other method, the child is told to add whatever is needed, carrying as in direct addition. $\begin{array}{r} 723 \\ 485 \\ \hline 238 \end{array}$ In this example, the work would be as follows: 5 and **8** would make 13, carry 1; 9 (8 and the 1 carried) and **3** would make 12, carry 1; 5 (4 and the 1 carried) and **2** would make 7. This operation is exactly the same as the one that would be performed

in adding 485 and 238 to get 723. The only additional need is that the child shall be able to recognize from the total and one part what the other part is: that is, shall know the number-combinations so well that any two numbers of a set will bring to mind the third one.

But the simplicity of learning and using this method is not its only advantage. For one thing, it makes it easy to subtract several numbers from a single one in one operation. In the following example the three lower sums of money are to be taken from the single sum at the top. Starting to add in the usual way, and subtracting from the top row by the shop method, the work would be: 3, 12, 20, and **3** makes 23, carry 2; 4, 11, and **0** makes 11, carry 1; 9, 12, 19, and **3** makes 22, carry 2; 4, 8, and **0** makes 8; 1, 10, 12 and **7** makes 19, carry 1; 5, 6, 9, and **1** makes 10.

$10982.13
3247.08
1923.79
4108.23
$ 1703.03

A similar method would be used if it were necessary to take away a certain number of times the quantity to be subtracted, as in taking 7 times 463 from 4876. $7 \times 3 = 21$ and **5** makes 26, carry 2; $7 \times 6 = 42$ and 2 carried makes 44 and **3** makes 47, carry 4; $7 \times 4 = 28$ and 4 carried makes 32 and **6** makes 38, carry 3; 3 carried and **1** makes 4.

4876
7 × 463
1635

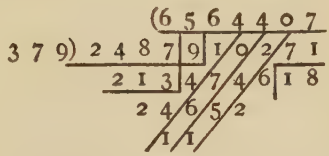
The last operation can be extended to shorten division very markedly, as in the following example. This method would not be given in the usual school arith-

metic. but has value in more advanced study of the subject.

Long Division

```
          (6564407
379) 2487910271
      2274
       2139
       1895
        2441
        2274
         1670
         1516
          1542
          1516
           2671
           2653
             18
```

Short Method



NOTE: The lines are here put in to show successive steps. They would not be used by one familiar with the method.

In the shortened division, 6 times the divisor 379 is taken from 2487 as in the previous illustration, the remainder, 213, being written below; 5 times 379 is then taken from 2139 (which can be seen to correspond to the operation in the long division); 6 times 379 from 2441, and similarly multiples of it from the successive diagonal rows 1670, 1542, 2671, leaving the final remainder 18. One interesting feature of this division is the small space it occupies.

The foregoing illustrations make it clear, I think, that the shop method of subtraction not only gives a more natural approach to the operation for the child, but offers to one skilled in it a more useful way of handling numbers.

In multiplication, reversing the order in which the

digits of the multiplier are used offers two advantages with no apparent disadvantage — unless the fact that it differs from past usage may be considered a disadvantage.

Usual Order	*Reversed or Natural Order*
2471	2471
136	136
14826	2471
7413	7413
2471	14826
336056	336056

The difference lies in the order of multiplying. In the usual order one starts to multiply with the *right hand* digit of the multiplier, in this case 6, following by each successive digit as one goes to the left. Therefore the products obtained are written so that each one starts one place farther left. In reversed-order multiplication, one starts to multiply by the *left hand* digit of the multiplier, in this case 1, and follows by using each successive figure toward the right, the successive partial products each ending one place farther toward the right.

It is evident that there is no difference in the difficulty of these methods. A child might be taught one or the other with equal ease.

The argument for changing to the "left to right" order — and this too is strongly recommended by mathematical committees — comes from the later use of multiplication in dealing with measurements and other approximations. Suppose that 231.4756 and 182.3421 were to be multiplied, the result being

known to be of no value beyond the second decimal place. By the old method, the work would need to be carried through to the bitter end, although a good share of the work and six places of the result were known to be of no use! Furthermore, the products first written are the ones of least importance in the result. By the natural method, the partial products can be stopped whenever it seems best, and the first partial product is the best single approximation, each succeeding product adding to its accuracy.

Usual Method	*Natural Method*
231.4756	231.4756
182.3421	182.3421
2314756	23147 56
4629512	18518 05
9 259024	462 95
69 44268	69 44
462 9512	9 26
18518 048	46
23147 56	2
42207.74700276	42207.74

Here, each multiplier is used only with the digits that will give results from the second decimal place up. The amount that would be carried from the next place below is, however, added in this illustration, the nearest unit being carried. The left-hand 1 multiplies all the number 231.4756; the 8 multiplies all but the 6, but it takes into account that $8 \times 6 = 48$ by carrying 5 (the nearest whole value) to the second decimal place; the 2 leaves off the last two figures, 5 and 6, but takes into account the 1 secured by carrying from their product; the 3 leaves off 756, but carries 2 from

their product by itself, and so on. The last number, 1, will be seen to multiply only the 2, ignoring the 31,4756 because that would all fall to the right of the second decimal place.

Comparing this with the former method, it will be seen that twenty-seven figures are saved in the work and result, with no loss in accuracy if only two decimal places are wanted. A slightly less accurate result could be obtained by omitting the carrying from the unused figures, and simply multiplying one less figure each time.

The justification for the omission of these extra decimal places is that if the given numbers are accurate only to four places, the result *cannot* be accurate beyond the second place — in fact, it is unlikely to be accurate that far. Suppose these two numbers are approximate measurements; then there are figures not obtained that belong in the fifth decimal places. These figures multiplied out will change every number to the right of the second decimal place, probably will change the second place also, and may affect still others. Is n't it, then, absurd to pretend to ourselves that we are getting a correct result when it cannot possibly be right? It is much better to get only as much as has value — and to save useless work at the same time.

There are many, of course, who will never have practical use for this shortened form of multiplication. They have, however, sacrificed nothing in learning the reversed-order method, for it has no disadvantage as compared with the other method.

The foregoing are two of the most striking changes that may be met in the actual operations of arithmetic. There are many changes in ways of teaching it, and some of them will be described in another chapter.

VI

INTEREST AND SCHOOL WORK

THERE is a widespread misunderstanding of the purpose of arousing interest in school work, or of using those interests already present in the child. *That purpose is not to make work easy, but to secure the driving force that accomplishes even the most difficult undertakings.*

If we examine our own acts, we find that there is a motive of some kind for each thing we do. The desire for the approbation of others; the closely allied competitive instinct; the pleasure of achievement even when no one else knows of it (though we do like to tell of it afterward); interest; race preservation; self-preservation, especially in its demand for food and other needs; the desire to satisfy one's conscience: these and others all play their parts in bringing about the things we do. It is likely that they all are based on that instinct for the preservation of its kind that nature implants in every living thing, but the fact remains that in some manifestation there is a reason why each act is done.

School life should not be, as has been too often the case, an existence separate and different from the rest of one's life. Nature gives man a long childhood in

which to prepare for adulthood. We cannot entirely cheat her even by refusing to carry out her plans, but we can lessen their effectiveness.

If she is to carry out her preparation, there must be some parallel between adult motives and child motives. It is not a satisfactory parallel if children do all of their tasks, sometimes even their recreations, because someone orders it, while adults do the corresponding things for reasons inherent in themselves or in their environments.

It is true, of course, that we wish that all of us might reach the stage of development where altruistic motives were the dominant ones; where we would do even the difficult things for the good of those outside of our immediate families and friends; where we would achieve nobly for duty alone, or for mere satisfaction in effort and complete accomplishment; where, for some remote end, we would strive through no matter how great difficulties to eventual completion. As a matter of fact, however, those who in a lifetime reach such heights are few in number.

It is by the approbation of others that a child learns what to approve in himself. It is only by accomplishing that he comes to know the pleasure of accomplishment. So no child can be expected to respond to the higher motives until the natural motives of the human race, such as those mentioned earlier, have been used to lead him along their path of development up toward less selfish motives and effort that does not look to immediate reward.

Then, too, it is important that some experience in

choosing between different possibilities be given in childhood because it is by such experience that one gains the ability to choose wisely — sometimes even to choose at all!

The various racial motives should therefore have their place in school, and "interest" will be considered to express them, whether curiosity, competition or some other form is the root of that interest.

The older form of teaching, in general, took little account of any kind of interest except a quasi intellectual one. Its intent was to fill the pupil with information, obtained for the most part from assigned lessons that were studied because the authority of the home and school compelled it, and to a lesser extent because of an element of interest that is in any new material. The teacher had the dual rôle of taskmaster and examiner, and the pupils were kept in a surface appearance of attention, usually by the force of authority, sometimes by real personality.

This form of teaching might be characterized as that in which the pupil was always outside of the situation, looking at it with more or less alien eyes. He was seldom an actual participant in activities other than as a subject for drill, nor did he live the experiences he studied. School subjects were often monotonous or of passive interest only, and while they might be conscientiously done, there was comparatively little of the inspiration and intense pleasure that make the best fixative for impressions.

The newer teaching — and I call it newer because its wide use is new, though individual teachers have

always used some of its ideas — is in striking contrast to this picture. Its aim is to have the child *inside of the situation*, an active participant in reality or in imagination. The reaction of the child who finds himself doing something real is the same as that of the man or woman who becomes a genuine factor in a situation — an active response.

It is not that the child shall do only what he pleases; that would assume that he is in a position to judge with full knowledge of the possibilities and relations of subjects and conditions. It is rather that, under wise guidance, he shall be helped to feel a broad human understanding of the thing he studies, shall recognize his own kinship with and dependence on the rest of mankind, past and present, and shall to some extent dramatize himself into the situation so that it takes on a personal relationship to him. The boy who succeeds in business is the one who, though starting in the humblest position, imagines himself at the head of the firm, and works as if he owned it already! No employee who looks on his position with the unresponsive eye of an outsider can give such service. It is the same in school. Let me give a few concrete instances and contrasts.

This world of ours is a wonderful place; to children especially it should be full of romance and fascination. The mere word "travel" brings up pictures: to some it may be of strange peoples, tropic vegetation, unknown seas; to others perhaps of sea lanes full of commerce, with merchandise pouring out of one port or into another. Yet some teachers of geography hide

their faces in a textbook, and are satisfied to ask humdrum questions about boundaries and populations and other statistics that can easily be found in an atlas if one ever needs to find them. I have known such teachers to refuse to accept correct answers from their pupils because, forsooth, "he" did n't say it that way. And "he" of course was the author, who would probably be the first to condemn such perversions of his intent.

Have you ever sat down in the family circle, surrounded by guide books and time-tables, with stateroom plans for a steamer trip, or other such accessories, and, while you planned, enjoyed in prospect the wished-for journey with as vivid a joy as attended its actual accomplishment? That is the way many children are studying geography to-day. Geography, history, English, arithmetic — there is hardly a school subject that can't be taught by such a trip.

Imagine a class that, after deciding upon the kind of a ship to buy — and the class I have in mind drew, painted, and modeled ships themselves in addition to bringing pictures of all the kinds they could find, — started on an imaginary trip around the world. The ship was stocked with merchandise produced locally, and as it sailed from country to country, the freight was sold and new freight was bought, so that the ship finally arrived home filled with foreign goods. Can you not see the interest with which those children studied the needs of different countries, their products, and all other factors influencing this enterprise? Add the letters supposed to be written home, and a study

of customs, of arts, and of other interesting features becomes just as natural.

One class started a similar trip by making individual passports — snapshots and all — and providing themselves with foreign drafts, which meant a purposeful study of foreign exchange.

A third class made a trip to one of the continents, each member as if sent for a specific purpose by some agency. Each investigated his own subject, and sent back reports which were taken up by the whole class. Schoolbooks, the library, home sources, were soon exhausted, and the search for material was carried far and wide. One boy wrote over thirty letters (you know how a boy likes to write letters!) in his hunt for authoritative information — and he got it.

There are no limitations on such a study of the world. A country's architecture, its art, its literature, all of these may be appreciated and even imitated. A Greek city, Japanese gardens, an African hut, or the Taj Mahal may appear in sand, wood, clay, and other such material. Even the pottery and prints of peoples and ages will not seem too ambitious to attempt, and impersonations and dramatizations will be added to make the people real. No effort will be too hard if interest waves its wand over the undertaking.

But other subjects present equal opportunities for good or poor teaching. A teacher recently started a class in American history by assigning a number of pages for study. The next day he asked "How was America discovered?" The first pupil told the story of Columbus. The teacher shook his head. The next

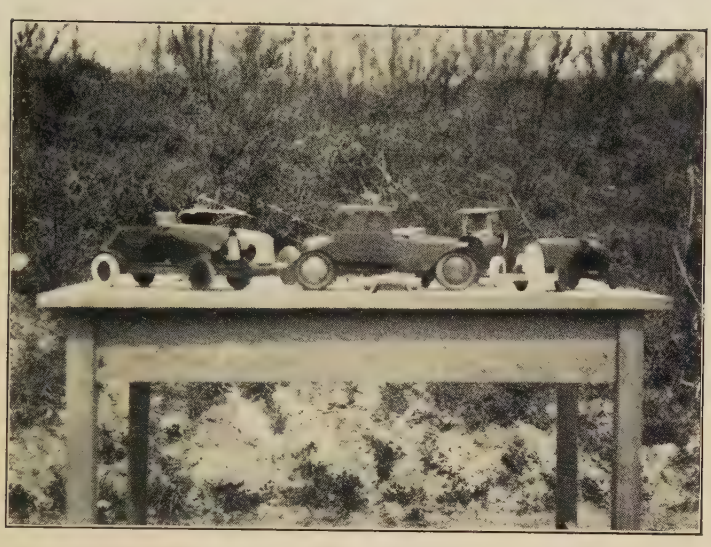
related the Norwegian explorations, but the teacher said "No." A third spoke of the Chinese. Again the answer was unsatisfactory.

There was a long pause, then one literal-minded boy raised his hand and volunteered, "Was n't it discovered by chance?" And the teacher nodded wisely and said, "That's very near it; but the book says, 'America was discovered by accident.'"

Contrast such teaching with that of a class that is studying English history by taking up the great problems of to-day, such as Disarmament, Internal and International Problems arising from the Great War, and the Irish Question, and is tracing their roots back to the earliest times. After discovering that England to-day is profiting by the successes and paying for the failures of centuries long past, the class will be ready to attack the subject chronologically and understandingly.

I am sure that the college class in history that was told to study the effect of the Reformation on the World's Fair then going on will never lose the view-point that came from that seemingly absurd problem.

More and more also history teachers are letting their classes dramatize the past in play, story, newspaper, or magazine form. Can you imagine the search for material that comes when rival newspapers, supposedly of a certain past date, are made up by two groups of a class? If the groups are supposed to be citizens of different countries, preferably rivals, so much the better. Athens and Sparta, Rome and



Automobile Show Made Entirely by Boys

Ready for a Discussion of Silk

The Park School, Baltimore

Carthage — no date is remote enough to hide life if the child once gets inside, living with the people of the day instead of looking at them through the mists of centuries.

I have known libraries to be besieged, parents to be harried to the point of complaint, because a class was living in imagination some centuries back and was contributing articles to a magazine of the day — which articles must, of course, be true to the customs, the events, and the feelings of the times.

One day recently I visited a United States history class just as the teacher sat down in a back corner, saying, as she eliminated herself from the discussion, "I wonder if Dred Scott is here." They were evidently studying the Dred Scott case.

There was a moment's hesitation, then a pupil rose, walked to the front of the room, said, "I am Dred Scott," and proceeded to state the case for his freedom, all, of course, in the first person. Before the first pupil was through, a second was waiting in front of the class. "I am Dred Scott's master." Turning to the first pupil, he said, "What do you mean by claiming to be free? You were my property; crossing State lines could not change that. Would I lose a horse that was mine because I moved to a different place?"

A third pupil became a second Dred Scott to answer the "master," and soon four Scotts and four masters were contending in turn vigorously and logically.

When the personal arguments were thoroughly threshed out, the teacher spoke again: "I wonder

what Lincoln would think about this. Did anyone here know Lincoln?"

In a moment a pupil was describing his childhood friendship with Lincoln, bringing in the intimate biographical touches that children and the rest of us love. Another told of Lincoln's young manhood. Then Lincoln rose and finished the day's discussion!

There was nothing rehearsed in what was said and done. They had investigated with interest and eagerness, and when the cue was given they simply dropped into the drama of events, and themselves became the people about whom they were studying, talking as they believed they would have talked, trying to keep to the realities as nearly as they could find out about them.

I have heard the same class, assembled in Congress, declare war on Spain; I have heard them debate the question of the Panama Canal. History to them is not words in a textbook, it is not a dry record of a dead past, it is a living story of the influences that have moulded and are still moulding the lives of human beings.

Not very long ago I heard a class in high-school English cross-questioned on the unimportant details of a book assigned them for reading. Not a word of inspiration, no appreciation — simply the dullest possible examination, that bade fair to make the pupils hate to read. The climax came when one member of the class was marked down twenty per cent because he could not remember the first word said by a parrot.

Not so illogical perhaps, when the master was trying religiously to make mere parrots of his own pupils!

Such teaching seems little short of a crime when the least encouragement will bring out such a wealth of feeling and expression.

From the youngest school-age on the children are full of interest in the new things opening up about them. They rush into expression — in line, color, form, music, words, whatever media are open to them — as naturally as they breathe. I have heard the youngest ones tell the most charming stories or clothe the natural phenomena about them with a poet's fancy. Poems, stories, plays, even essays with a philosophy that is a cross between the play of the master minds they have been reading and their own naïve attitudes toward life, simple straightforward talks on anything from their own interests to the greatest world-issues, all come to the wise teacher of English. Appreciation and expression; and appreciation so often comes through expression!

I have been laughed at because I have said that if I were teaching English I would have my pupils try to add to Shakespeare's plays. "For," it is said, "No one has ever written like Shakespeare: how absurd it is to talk about children's doing it." And yet what could do more to fix the understanding and appreciation of one of Shakespeare's plays, to arouse a child to study it with insight and affection, than the attempt to interpolate a scene that is implied, to add a conversation omitted, or to finish the story of some character whose future is left untold?

Try, yourself, to write letters in keeping with the personalities of some of the characters in a novel you are reading, and see how much it requires of insight into the people and the book: you will no longer wonder that English teachers are using such methods of bringing their pupils into the atmosphere of what the class is studying.

Even practice in letter-writing need n't be a bore in school if the letters are written to real people. The increasing use of correspondence between pupils in different schools, preferably in different parts of the country, points the way here. One child, on receiving the first letter from a pupil in another city, said, "I've always been interested in that city; now I'm going to find out all about it." Can you imagine a better motive for writing a letter of inquiry, and can you doubt the effect on the other child, thus invited to unfold the claims of his own city?

It is said that a teacher of mathematics once claimed to have reduced the teaching of geometry to a science. He never even had to speak in class! The pupils filed in and sat down. He motioned to the first one, who thereupon stood up and recited a theorem. If it was correct the teacher made a sign which meant "Take the next theorem for to-morrow." If it was wrong, — which meant any variation from the text, — another sign told the child to restudy it for the next day.

I have talked with a man who could recite the entire *Euclid*, word for word and letter by letter. He had little idea of its meaning, and was fortunate in having

a body so strong that he was in demand for ditch-digging!

Some years ago I went into a school and took charge of a geometry class whose teacher was sick. I found the class as a whole able to write out any theorem — statement, proof, everything complete — on being given its number in the book. But few, if any, had the least idea what it was all about, and not one could even start on any original bit of geometrical thinking.

At the other extreme in teaching-methods are the classes to whom all of geometry is a fascinating original investigation. For them each theorem is a challenge until it is solved, when it becomes a tool, having a definite purpose and a future use. In geometry's own field and outside they apply, originate, judge, and reason. Their efforts range from an investigation of all the properties of a figure to the attempt to use mathematical principles in design and even invention. Pupils in classes of this kind have had assigned as lessons the invention of such tools as parallel rulers which are used in navigation, or pliers with parallel jaws, and have succeeded in their attempts.

In arithmetic, schools have their banks, they study business applications not only from a text, but also from the newspapers, the financial reports, or the material secured from business houses.

A class in a school that was not of a size to justify carrying on a bank, recently studied banking methods of making loans. The class divided itself into bankers and borrowers. Each borrower worked out a business

proposition requiring a loan and went to one of the bankers to get it. The bankers — as is usually the case — were conservative and required convincing, so that some of the propositions had to be changed to suit their views. When the loans were decided upon, all necessary papers were drawn, the loans were passed, the borrowers received their checks, and later repaid the banks. And woe betide any careless banker who figured interest or discounts incorrectly! Each pupil in this class had experience both as banker and borrower, and all acquired a new respect for arithmetic as a factor in business, and for accuracy as a requisite in arithmetic.

Somewhat different from these examples, but with the same idea underlying them, are the more general projects that contain something of all subjects.

A public-school class in one of the large cities recently spent several months investigating the milk industry of that city. The search for information took them out of the usual school routine of subject matter, even out of school itself at times. They worked over production- and delivery-costs, retailers' profits, and other arithmetical sides of the question, made a study of cleanliness and sanitation in regard to it, learned much of local geography, and used the English language, both written and spoken, in many practical ways. That training for more intelligent citizenship came as an added benefit is unquestionable.

Another class of children about eleven years old, this time in a private school, spent ten school days on one investigation that had not been foreseen by school

or teacher. They had been taken to the harbor to go through a steamer that had recently arrived in port. While going through with the guide, they became interested in the cargo that was being lightered from the coaster to a larger cargo-boat that was to take it to England. As soon as the inspection trip was finished, the interest of the entire class became focused on this cargo. They found out all they could about it, including the fact that it was tobacco from Virginia, and was being sent to Liverpool for manufacture into cigars. But the information available at the boat was not enough for them; they got in touch with the office of the line, and even wrote letters for still further information.

Before leaving the subject, the class found out the number of boxes of tobacco, with their weights, and worked out the cargo tonnage; they found out initial cost, freight rates to Baltimore and to Liverpool, lighterage charges and incidentals, selling-price in England, and so obtained the percentage of profit on the whole transaction; they traced the history back to the first exportation of American tobacco; they studied steamer routes up the coast of the United States and from Baltimore to Liverpool; they even studied the railroad maps of England in the folders of the railways, because, they said, "the tobacco would be shipped from Liverpool throughout England." The results of their investigations were organized, given as talks by various members of the class, and even given before other classes to whom the pupils thought they would be interesting. All this without an assigned

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lesson, and with the teacher, as she said, "trying her best to hang on behind."

It might be interesting to note that I told of this last class-investigation at an educational meeting during a discussion of the value of work of this freer type. One of the superintendents jumped up and said that he did not believe there was a superintendent in the United States who would be fool enough to stop such a piece of work, no matter what it did to his system and programme! The danger is that such work will not get started, rather than that it will be stopped.

It should be said, however, that for a teacher to get the best results from such work, she must continually keep in mind what her aims are, and must see that she does not let the device, project, or whatever it may be, become an end in itself instead of a means. There is undoubtedly some very interesting teaching that so centres the mind of teacher and class on one factor that much of value is unnecessarily lost. For example, a class might make a large map of some country out of clay, and become so fascinated with the technic of constructing a good map that the original intent of learning about the country would be lost. Much of value might remain, including many impressions about the country, but the important connections would not be made.

The examples so far quoted depend for their interest on the subject itself, the interest coming principally from its connection with human beings, occasionally, as in some of the geometry, from pleasure in achievement. There are subjects, or parts of subjects, that do

not present so direct an appeal. For such, competition presents a foundation for interest so intense that surprising results can be obtained.

The old spelling-match has great possibilities, and can be adapted for use in various subjects. As individual competition should be subordinated to coöperation, — team play, — variations that emphasize that feature are the best.

An excellent match consists of dividing a class into two groups of equal spelling-ability, giving them a test on a certain list of words, counting the errors and announcing the winning group. The class is then told that this is only a preliminary test, and that the real trial of strength will come in a week, and will be on the same list of words. In the meantime each team, under the direction of its captain, may prepare itself for the match. The result is likely to be that even the poorest spellers will know the list almost perfectly when the test comes. This can be adapted for arithmetic, or for any work that is benefited by the kind of drill the pupils will give each other.

Stanwood Cobb described "spelling baseball" in an article in the *Atlantic Monthly*. This is a good method for many purposes. It is excellent for interesting a class in the Latin vocabulary. The class is divided into two teams, each having a pitcher and a batting order. Home plate and the bases may be chairs or simply places. The teacher gives to the pitchers duplicate vocabulary lists, for English-into-Latin or Latin-into-English translation. If it is English-into-Latin, a correct answer must give the word completely,

with no error in forms. Similarly, Latin-into-English may require gender for nouns, and whatever information the teacher requires for other words.

The pitcher chooses a word and gives it to the first batter on the other side. A perfect answer counts a ball, an error of any kind a strike. It may be necessary to agree upon fewer than the regular number of balls and strikes in order to cover the class more rapidly, but, if not, four balls give the pupil a pass to first base, and three strikes put him out. Team play is essential because only by being forced from base to base by those following can a player make a run.

The excitement of this game is sometimes just as great as in baseball itself, and self-improvement and team-improvement under its stimulus are remarkable. Such a match recently produced a situation with the bases full, three balls and two strikes called, and the pitcher hunting through the list for its hardest question. The batter answered it correctly, forced in a run, and the pupils went wild! Contrast the attention given by the children to the words or other material being used in such a game, where the success or failure of the side is influenced by the correctness of each answer, with the rest that most of us took in the Latin class when the teacher called on someone else!

Improvement shown by such methods is an important criterion of their worth. A class that in a Latin baseball game played six innings in forty minutes on its early trials, soon reached a point where one side stayed at bat the whole forty minutes, the other side being unable to find questions hard enough to strike

out three of its members. One very poor speller missed only one twelfth as many words after his teammates had prepared him for a spelling match. A boy raised his standing on some Latin material from 6% to 100% in a few days through an interesting drill-device. Any teacher who uses such methods can add many examples of the startling improvement that comes when the work is done with pleasure and interest and — therefore — attention.

These are but a few fairly typical examples from the hundreds of interesting situations and devices in use daily in our schools. They correspond very closely to much that is being done in more advanced fields. We hear of the "case method" in schools of philanthropy, law, medicine, and business, in all of which actual situations are outlined, analyzed, and solved. Business executives trying to improve their methods send to the great training-schools their solutions of the problems set for them; students of the scientific administration of philanthropy study the situations of families needing help and outline the best treatments for their difficulties; and embryo lawyers attack the weighty problems of past bar-cases. There is no subject too formal to profit by such teaching, none so removed from human interests as to offer no opportunity for it. One of the best of its results seems to be that eventually pupils largely outgrow the need of any motive that might be considered artificial, and enjoy work on account of the mental stimulus derived from the effort itself and from the sense of achievement.

Much could be said of the effect of interest on the

physical — particularly the nervous — condition of the children. This is perhaps the most important aspect, but it is outside the scope of this discussion.

Much also could be said of its results in the home through the lessened tension, the smaller amount of "home work," and the better disposition of the child. Undoubtedly it should be emphasized that a great by-product of such school work is happiness. The work furnishes an outlet, a means of expression, that uses the nervous energy so intensely present in most children.

One child, after changing from a school where the work was of the drillmaster-examiner type to one where interest, initiative, and expression were encouraged, arrived home — as he said — "fluttering happy," and explained the difference by saying "The days are like an express train passing, while at —— they were like a freight train that you think will never pass."

Another child, when an adult rather critically asked, "Is it possible that you don't know each day exactly what you will do in school the next day?" answered, after a little hesitation: "Well, you see in our school it does n't seem to be so much what you 're going to study to-morrow, as what you can contribute to-day."

The remarks of these two children are pretty good evidence that real education is going on, and that the schools using such methods are following the advice Huxley gave a friend when he told him to see that his boy's schooling was not allowed to interfere with his education.

A Ship in the Harbor
built by kindergarten children

A Two-Story Eight-Room House
built and furnished by children four to six years old
The Park School, Baltimore

VII

STUDYING THE INDIVIDUAL

PROBABLY the most important of the recent developments in education is the advance in scientific methods of studying individual children. Education is perhaps the last important industry, if I may call it that, to develop methods of analyzing its material. Business and the various professions have long had methods of examination and diagnosis. Education alone has continued to depend upon unsupported personal judgment. That this lack of diagnostic methods has proved a handicap is unquestioned. Teachers have been compelled to think in terms of large groups rather than in definite distinctions. Pupils have been considered "good" or "bad," "bright" or "stupid," and only the exceptional teachers have been able to analyze more completely.

This blind treatment of undiagnosed conditions is rapidly being replaced by methods that promise to point the way to intelligent meeting of the needs of each child.

It might be added that much more is now known about children in general, and this knowledge serves as a basis for the study of individuals.

The complete study of the child, aside from the information concerning his past, his environment, and so forth, falls roughly under four heads:—

The physical examination (which has been taken up in another chapter),
Mental, or intelligence tests,
Subject-matter standardized tests,
Studies of habits and characteristics, mental, social, and moral.

The intelligence or mental tests are a twentieth-century development. The first practical tests were originated in France by Binet and Simon, the individual tests used in this country all being extensions or revisions of their work. On this account they are usually called Binet tests.

The object in using an intelligence-test is to find out a person's natural mental ability. The best tests seem to determine with some accuracy one's ability to think along certain lines, and their results seem to be largely independent of training. They examine a person's success in various kinds of thinking, such as remembering, making comparisons for likenesses or differences, making logical analyses of different situations, and so forth. The total result is a reasonably dependable estimate of the person's mental capacity in fields that require the kinds of thinking tested, and those fields seem to be the ones commonly considered as requiring "intelligence."

The tests rate a person by finding the "mental age," which means the age that his score on the test most nearly fits. For example, a ten-year-old boy might have a mind whose ability to think would be shown by test to approximate that of the average twelve-

year-old child. In such case he would be said to have a mental age of twelve years. Similarly a ten-year-old child might think only as well as the average nine-year-old child, in which case he would have a nine-year mental age.

The most common way of referring to results of such a test is in terms of "intelligence quotients," or, as abbreviated, I.Q's. An examiner finds a child's intelligence quotient by dividing his mental age by his chronological or actual age, and expressing the result on the scale of 100. If a child is mentally the same age that he is actually, his I.Q. is 100; he has average intelligence for his age. A child of ten years whose mental age is twelve years has an I.Q. of $\frac{12}{10}$ of 100, or 120, so is considerably above the average. Similarly, a child of ten whose mental age is nine has an I.Q. of $\frac{9}{10}$ of 100, or 90, and is therefore below average.

Experience seems to be showing that the I.Q. of an individual is likely to remain approximately the same. There are occasionally cases where a decided change upward or downward occurs, but the probability is that a test by a skilled examiner will give a reasonably accurate estimate of a child's inborn capacity for thinking along the lines tested, unless there is a physical reason that invalidates the result. Some of the changes that have occurred in intelligence ratings probably have come from the failure of an examiner to secure the entire confidence and coöperation of the child. One child said, "The questions seemed silly, so I gave silly answers." Others may be accounted for

by changes in alertness or ability to control attention due to physical causes, or by other more lasting defects, one of which may be poor functioning of the ductless glands. In fact, marked improvement has come about in some children after they have been supplied with the lacking secretions. Whether actual changes in inherent quality or type of mind — aside from the maturing process — are possible seems therefore still to be in doubt.

The wide range of variations in intelligence is shown by the fact that intelligence quotients among school children run all the way from very low figures, even as low as 50 or less, to very high ones, exceptional cases having scored as much as 180.

That schools in the past have treated all children in much the same way, only recently varying courses and methods to fit such marked differences in ability, is a commentary on the backwardness of our diagnostic methods and our lack of realization of the importance of individual treatment.

The success of the Binet tests has stimulated psychologists to devise methods of testing entire groups by written examinations. It takes an examiner an hour or more to give the Binet test to a single child, while written tests can be given to any number of pupils at the same time.

Such tests have been devised and, while not as accurate as the Binet tests, they have given startling results at a small expenditure of time. Even the marking does not require much work, as it is very largely done by the use of stencils.

One of the earliest group-tests was that used in the army to divide the enlisted men into groups of various intelligence-levels. More and more accurate ones have been devised until now they are proving of tremendous value in picking out school children who should be given more careful individual diagnoses, either because of very low or very high ability, in testing for college entrance, and in various other fields.

The experiences of several colleges seem to indicate that a one-hour mental test may be a better measure of a college student's likelihood of success than any other method yet devised.

At Columbia University three methods of judging candidates for entrance have been used: preparatory-school scholarship records, entrance examinations in subjects, and mental tests. The remarkable success of the mental tests may be judged by the fact that the three methods have shown the following correlations [1] with success in the freshman year:—

School records, about 30
Subject examinations, from 40 to 45
Mental tests, 65

Such results led the Dean of the College to say, in his 1922 report: "In fact, experience with the intelligence test indicates that it is the most reliable instrument that we possess for giving the information that it purports to present."

[1] Correlation measures the correspondence between two groups; the higher the figure, the closer the correspondence.
Results may be from − 100 to + 100.

The usual type of group-test consists of printed blanks on which a pupil is asked to fill in or mark the questions in the ways directed. Like the individual tests, they ask questions that try the pupil's response in as many kinds of thinking as possible.

All tests have value beyond fixing a comparative intelligence-level, for they very often show the strong and weak points in a way that not only guides a school in planning courses for a pupil but sometimes also helps to choose a type of vocation in which the child is most likely to be happy and successful. In planning the future of a child, it is often better to consider a test as indicating a type of mind, rather than just a level of intelligence. There seems no doubt that some of those whose I.Q's are not high, due perhaps to inability to think abstractly, will, nevertheless, succeed in becoming decidedly useful members of the community, either because they have excellent manual skill, an aptitude for one of the arts, unusual ability in dealing with people, or some other asset not specifically measured by the tests.

It must always be remembered also that, while remarkably dependable in their own field, the mental tests are but part of the evidence, and all of it is needed for even approximate certainty.

Much fun was made of the early mental tests by the newspapers and popular magazines. The picture of a college professor trying a mental test and being shown to be a mere idiot has tickled the fancy of the public and so has been played upon in many forms. As a matter of fact, the tests — as has been shown — have

been proved to be remarkably accurate if they are used by capable examiners, and are not expected to cover fields outside of their intent. It is quite true, however, that in the early days of such testing some very capable men and women did poorly with them. Two factors probably influenced these results: the first, that the tests given were still in a very experimental stage, and the second, that they were fitted for children rather than for adults. As a consequence, where a child might give a perfectly natural correct reaction, an adult, fearing from his greater experience some trap, might see a dozen possible avenues of approach, some of which would carry him into fields not intended and so would give him a technical failure for the test. The latest forms for these tests have great value even with adults, and are beginning to make themselves invaluable in many fields outside of school. They are even being used to determine upper and lower limits for the various vocations, on the theory that there is a lower limit of intelligence below which a man or woman cannot succeed in a certain job, and an upper limit — in many at least of our occupations — such that a mind above that limit will not be satisfied to remain in the work or will produce dissatisfaction and unhappiness by remaining.

There has also been a certain amount of opposition to mental tests, both among parents and among teachers. Parents' objections have been largely actuated by their unwillingness to confess the facts if their children did not prove to be unusually "bright." It is no kindness to a child not to acknowledge conditions

exactly as they are and to try to make the best of them. All children seem bright to those who love them, for the development of any child is remarkable if the child is even approximately normal. It is then not to be wondered at that there are no ugly ducklings in the family circle.

The objection made by many teachers is that they prefer to trust their own judgments concerning pupils. Such an attitude is simply ignorance, for it has been proved over and over again that the judgment of even the most expert teacher is sometimes seriously at fault. Even if one were practically certain of that judgment, confirmation by such a scientific instrument would be worth having.

The number of schools that are using mental tests has increased so tremendously within the last few years that there seems no doubt that in the near future every pupil will be given this diagnostic aid and will be helped very greatly by the better understanding with which he will be treated in school. The following example is one from my own experience and illustrates the great assistance such tests can give in helping to ferret out the cause of school failure.

A number of years ago, a pupil almost seven years old at the end of the first primary class proved not to have learned to read, although every other child in the class was reading. He was given an individual mental test and a special physical examination, and every effort was made to discover the cause of his deficiency. The physical examination showed no defect and the mental examination showed him to be above

average for his age. He had apparently grasped all of the interests and activities of the year aside from the reading, which confirmed the mental diagnosis. The boy was therefore assigned to the second grade, with the notation that something had prevented his understanding the use of symbols to represent words, and that great care should be taken the second year to find out the cause and remove it.

During the second year the conditions remained the same, and in spite of every effort, even to the extent of having special teachers work with him, investigating his interests and his habits of thought and trying various expedients, the boy remained unable to read. At the end of the second year another investigation of his general condition was made, and as before it showed that he was normal mentally, normal physically, normal in his general reactions toward his work and toward reading, but he nevertheless was utterly unable to read. In the school's investigation of reading it was found that similar cases had occurred a number of times in the past and that they had been diagnosed as "reading-blindness." As the only symptom of reading-blindness seemed to be inability to learn to read, this did not throw much light on the situation, and that explanation was put aside for the time.

On the basis of the mental tests and the boy's general information and interest he was put in the third grade, with the problem again stated for study. Again the year ended with the child still unable to read. The matter had become seriously acute, as

more and more of the school work centred about reading and the chance that a pupil unable to read would be able to continue his progress was small.

A final investigation was therefore made which separated oral reading into its most detailed steps, from the light's striking the printed page to the tongue's saying the word seen. All the various stages were marked as physical, mental, or combined physical and mental. A list of the physical steps was given the examining physician, with a statement that something must be wrong and it must be found. I myself took the mental steps in the same way, with an even stronger determination to find the cause.

When the physician's report came back it said: "This boy is perfectly normal except for his eyes, which are under the care of one of the best oculists in this part of the country and have been refitted with glasses within a month. I myself have tested the glasses and they are correct." In my mental examination I had much the same experience, for I again found that the boy was perfectly normal in all his responses, the total result showing him considerably above the average. The only thing left on the list of steps was a final paragraph which I had written without much hope of its having any bearing on the subject. It said something as follows: "Reading depends upon one's recognizing the words as old friends, much as one recognizes a person who has been seen many times before." This did not seem to be a key to the situation, but as it

was all that was left it was taken up and studied. There seemed but two ways in which a person could fail to recognize an old friend — one a definite mental defect, such as "reading-blindness"; the other a failure to have formed the friend or to have seen him in a way that would impress itself on the mind. The second, used as a starting-point, seemed to show no possibility except a failure to see words as total pictures, and I could think of no reason for this except a retina that was not sensitized completely.

After considerable experiment, and some discouragement, I found the boy's range of vision to be so small that he could never see more than three or four letters at a time and then only by much effort. It was true that his glasses were properly fitted, but the retina was sensitized only at the end of the optic nerve, so he saw only a spot at a time and consequently never formed the mental pictures necessary for reading.

Fortunately it proved possible to cure him, and he went on through school, learned to read as well as anyone, and lost only one year in the entire process.

I give this case because it is clearly one where the mental tests alone gave us the faith to continue working until we finally found a defect so difficult to diagnose that neither physicians nor oculists had found it. Without those tests we should have been forced to conclude that the boy was mentally deficient, and his life might easily have been ruined by the treatment that would have resulted.

While this example is an extreme one, it is quite possible to quote many others that have had equally important results. I myself once tested a fourteen-year-old boy who was still in the second grade in school, who was recommended for commitment to an institution by every teacher with whom he had come in contact, only to find that the boy was absolutely normal mentally. His only trouble was a speech defect which made his language so difficult to understand that no teacher had ever taken the trouble to learn to interpret it. Once interpreted, it was possible to understand the boy, and the tests showed that he was thinking normally. The last report from that boy showed him to be earning his living and helping his widowed mother.

An important use that is being made of the results of intelligence tests in some schools is for marking every pupil on a basis of his or her possibilities. In such a system the pupil might receive the equivalent of 100% if his work was all that could be expected of one having his quality of mind, while he might receive a mark considerably above 100% if his other qualities, such as industry, perseverance, and so on, were so good that his achievement was greater than would ordinarily be expected for his ability. The most valuable results seem to come with the more brilliant children, who in the past have received high marks without effort and therefore often without receiving much training from their school work. Such pupils would, by this method, receive low marks if their achievements were not in keeping with their

high abilities, and therefore would be spurred to effort in place of being allowed to mark time.

Another very valuable addition to methods of diagnosis is the standardized subject-matter test. Psychologists some years ago made a number of interesting experiments as to the ability of teachers to mark various kinds of school work. The results were astonishing and somewhat dismaying. It was shown that the extreme variation in the marks of a number of skilled English teachers on a high-school composition might average about 30%, while variations as high as 60% were noted in some cases. Even in mathematics, variations occurred wide enough to change from failing to almost honor work.

These differences came largely from different standards. Teachers of experience and ability might differ widely in the emphasis they gave to punctuation, grammar, spelling, paragraphing, the thought of what was written, and fluency of the language. A teacher who counted very heavily on spelling might well overbalance the good points of a composition by her deductions for a few misspelled words, while one who put most stress on the thought and its wording might well minimize other defects.

Such variations, however, were not the only ones. It was shown that the same teacher was unlikely to mark the same paper twice alike. The variation was greatest if the marking was done in the morning in one case and at night in the other, or if other external influences affected the teacher's mental attitude. Based partly on these experiments, partly on the need

of having some definite standards, — especially in the fundamental subjects, such as reading, writing, spelling, and arithmetic, — the so-called standardized tests have been devised. They are independent of the judgment of the teacher and practically automatic in their marking, so that it is quite possible by means of them to compare classes in different schools or different cities, and in this way to judge whether pupils are as well grounded as they should be.

Some of these tests, as well as other methods, are also particularly valuable for diagnosing individual weaknesses in the details of the various subjects. Dr. Colin Scott, head of the Department of Education at Mount Holyoke College, in his experiments in the public schools of Springfield has repeatedly obtained in a few weeks a gain of a year or more's efficiency in arithmetical operations. This was done by using methods of analysis that indicated the exact point of difficulty. When a difficulty is once known, it is often easy to remove it, with a resultant rapid gain.

This last year a sixth-grade girl in a private school showed an increasing weakness in arithmetic, although she was on the whole an excellent student. A complete analysis of her arithmetical operations showed that practically all of her errors came in the seven, eight, and nine multiplication-tables. A résumé of her school history showed that she had been sick and out of school when her class had done that work some years before. Although she had supposedly made up the work lost during her absence, those

tables had never become automatic, and were proving an increasing source of trouble. It was then comparatively easy to help her to relearn the tables and so to eradicate to a large extent her arithmetical difficulties.

Tests on reading-speed and the amount that is understood of what is read are perhaps the most valuable of all subject-matter tests. Ranges of speed from below 100, to 600 or 700 words a minute are found among schoolchildren. A child's inability to succeed in high-school work is sometimes entirely a result of his having been taught reading in such a way that he cannot read rapidly nor can he centre his mind on the thought.

There are even tests in process of development that seem likely to show in which type of studies the pupil has the possibility of success. They are used to pick out those who are so weak in language-sense that the study of foreign languages is unlikely to be of value to them, to segregate those who should take a minimum amount of mathematics, and so on.

One of the results of the use of mental and subject-matter tests is an increased demand for methods of instruction that allow pupils in the same class to progress at different rates. It is not easy to allow this without losing the class discussions that are so valuable, and sacrificing the social coherence of the groups. Various experiments are in progress, several of which give opportunity for individual advance in such "tool" subjects as spelling, writing, reading, and arithmetical processes, but bring the group together

for the social studies, or at least for those parts of them that are best suited to development in a group.

It would not, however, be sufficient for a school to know the physical condition of a child, his mental capacity and how well he was doing in his subjects, if the social and moral characteristics and the habits underlying success were not given consideration. The best mind may fail if other qualities are absent, while even one of no great mental ability may prove a valuable member of the community if industry, straightforwardness, and other such qualities are present.

More and more, therefore, schools are studying these very important sides of a child's development, with the idea of helping him to correct weaknesses and to use his strength, and of planning for his future in school and beyond in a way that will best fit his individuality.

There are various ways of doing this, but they are all alike in trying to give the teacher a language in which to speak of the characteristics of the pupil and in helping her to think more definitely and with less personal bias in regard to development along different lines. One system that has proved very helpful divides children into five classes in relation to each characteristic, a teacher placing each pupil in the class into which he most nearly fits. The following classifications are examples of this method:—

Industry

1 Those who try to get as much as possible from the course, showing enough interest and initiative to investigate beyond the teacher's requirement.

2 Those who conscientiously meet all requirements, both in giving attention and in doing assigned tasks.

3 Those who have the general intention of conscientiously applying themselves to their studies, but fail often enough in carrying out this intention to force the teacher to take too much responsibility for work the pupil should do.

4 Those who are decidedly irregular in their attention and application, so that the teacher must continually apply pressure.

5 Those who will not, or cannot, hold their attention to their work. This may be shown in class, in project-work, or study, or in all.

Honesty or Integrity

1 Those who not only are honest with property and in their school work, but are absolutely straightforward and truthful in all their relations.

2 Those who are honest with property and in clearly defined situations, but may sometimes evade or excuse themselves instead of meeting an issue squarely.

3 Those who are generally honest, but are still lacking in ability to make fine discriminations between honesty and dishonesty. They may sometimes strain a point in getting help in their work, or equivocate, or be careless of property rights in small things, such as pencils, paper, and so forth.

4 Those whose ideas of honesty are less clear than in the higher classes, or whose sense of honor is less keen. They more easily yield to temptation, and are likely to be more ashamed of being caught than of the dishonesty itself.

5 Those who are deliberately dishonest.

In case there are clearly defined differences between a child's honesty regarding property, school work, and straightforwardness and truthfulness, a double, or even triple, mark may be given. In that case the numbers would indicate in order the child's classification in these respects.

Initiative and Originality

1 Those generally able to start and carry on projects or investigations without suggestions from others.

2 Those generally able to carry on alone projects or investigations started or outlined by others.

3 Those who can help in group-projects or investigations. They may show a higher degree of initiative or originality where they have particular interest or expertness. (For example, a boy whose father is an electrician may appear to have more originality in this line because his environment has helped him to acquire greater skill and knowledge of it.)

4 Those who show little originality themselves, but appreciate the initiative and originality in others enough to follow their lead or to imitate them.

5 Those who are almost or entirely dependent in their thinking.

For young children an interesting variation is that in which every school subject, both the regular grade subjects and the arts, is marked not by a number or a letter, but by a complete analysis of the pupil's response. For example, a teacher would discuss a child's language-success under the following heads:—

Language	*Literature*
ORAL	
Vocabulary	Appreciation
Expression	Reproduction
	Creation
WRITTEN	
Thought	
Style	
Mechanics	

The teacher would also study the child's habits and characteristics, writing in the same way a paragraph descriptive of the analyzed response for each. For example, one heading might be

Initiative	*Self-Control*
Leader	Poise
Participant	Courtesy
Follower	

Such studies not only give the teacher a better understanding of the pupil, but keep her in an attitude of mind that realizes the problem as one of the complete child rather than one of teaching particular subjects.

These methods promise eventually to do away with the failure of the school to meet the needs of so many of its pupils. They at least make evident the problem to be attacked, and in many cases they also indicate the method to be applied. As they become more complete and more dependable, and our knowledge of child psychology increases to a point where we know how to meet all recognized situations, every child should at last be given a fair chance to make the most of his possibilities.

VIII

MARKS AND MARKING

Two important changes are coming about in regard to marking. One concerns the amount of marking, the other the method.

It has been no uncommon sight to see a teacher so busy asking questions of the pupils and marking each answer in her class-book, that she had no time either to teach or to be of other service to the children.

The examiner-teacher — the one whose idea of teaching is assigning lessons one day and marking the children on their knowledge of them the next — is as out of date as is the drillmaster type, whose formal deadly drilling on more or less unrelated, and often unimportant, facts has made so many children hate school.

A good teacher is too busy to calculate and put down a mark for everything a child says. She is too busy inspiring the children to an interest in the subject under discussion or making a contribution from her greater experience and broader knowledge. Also she is dealing with individuals whom she must study and understand. If she is figuring whether an answer or remark is worth 7 or 8 — or perhaps 74 or 75 — she can hardly be probing the child's thought and study-

ing how best to give the needed light or to use the contribution he has made.

Furthermore, if by virtue of her skill and good fortune a teacher has a class that will take over the recitation and handle it in a way to let her sink — for the most part — into the background, she is nearly, if not quite, breaking faith with the members of that class by marking their discussion, which has of necessity become spontaneous and unselfconscious.

For pupils who are continually marked soon become self-conscious and calculating. They say, not what springs naturally from their own experiences and ideas, but what seems likely to obtain a good mark. They quite naturally and wisely play upon the idiosyncracies of the teacher, quoting her book if she has written one, her favorite authority if she has n't. There is a certain stimulus to hypocrisy in such dealings, a tendency toward intellectual dishonesty that it is unfortunate to encourage. There is also of necessity an emphasis on the gap between pupils and teachers, on a kind of rivalry that sometimes becomes antagonism. The pupil becomes a salesman. He sells to the teacher as little knowledge as possible for as high a mark as he can get.

Contrast with this the condition where marks are never in evidence, but the teaching presents vital and interesting matter for investigation and discussion. There should be standards of achievement to be reached, standards at least as definite as if obtained by continual marking, but they should be

in the background, secondary to natural interest and to pride in achievement itself as contrasted with success in obtaining artificial rewards for achievement.

For while marks have undoubtedly served as the stimulus by which many pupils have been urged on to better school achievement, they are probably seldom or never the best stimulus. They are frankly artificial, to a certain extent sordid. The teacher who depends upon them to whip on her children should stop and ask herself if she is not simply too lazy to find better methods. She should ask herself whether her emphasis on marks has any effect in building the habit of success in each child, whether it makes a wish to contribute to the group, and pleasure in intellectual or other achievement, prime motives for the children; whether it really stimulates and uses their natural interests; what effect it has on her own relations with her pupils, particularly whether it does not make her judge them by their success in getting high marks, so losing her insight into their possibilities and her patience with those of slow understanding.

It is beyond question that overemphasis on marks, either at home or at school, has serious effects on many children. With some it shows in nervous tension. Rating the members of a class in order, and stimulating each to try to improve his rating, and other such methods of continuous urging, have produced many sleepless nights, fits of hysteria, and setbacks from normal growth. Children unable to keep the pace demanded by parent or teacher sometimes even fall into dishonest habits in the attempt to

Building a Concrete Duck-Pond

Haying for the Animals
The Park School, Baltimore

avoid the shame of disappointing that demand. I have known pupils to give at home, day by day, totally false reports of their progress and achievements, solely to satisfy the overanxious mother who counted high marks above sound development.

Then, too, marks are almost always more or less unfair: the more exact they pretend to be, the more unfair they are. It has been conclusively proved that even the best teachers have not common standards of judgment and skill in marking to a degree that will make different ones rate a pupil's work alike. Cases when a pupil changes from one class or one school to another and without change of attitude on his part finds himself rated as good instead of poor, or vice versa, are not uncommon. Experience in having a number of teachers mark the same paper have almost invariably shown such differences in judgment as completely to shake one's faith in too exact marks. When it is added that the same paper re-marked by the same teacher after a period long enough to ensure forgetfulness will often show quite a variation in the grade given, it seems to prove beyond question that overfine marking is an absurdity and an untruth.

Those who have studied this subject most carefully are, I think, unanimous in believing that when pupils are marked at all, they should be graded in groups, each of which covers a fairly wide range, rather than by percentages. Consequently groups covering perhaps ten per cent are becoming the rule. Schools that have adopted such a method use *A*, a word such

as *Excellent*, or *9*, to indicate membership in the best group, perhaps corresponding roughly to those who formerly would have been marked from 90% to 100%. *B*, or *Good*, or *8*, would cover the 80% to 90% grouping, *C*, or *Fair*, or *7*, those who are 70% to 80%, and so on. This eliminates overfine distinctions, yet clearly indicates the type of work being done. Some schools use plus or minus, or both, to modify the marking or to show the trend upward or downward.

Such a system does not claim more than it can do, and it has not the unfair element of such markings as still exist in some schools, where percentages are averaged even to hundredths of one per cent! When it is considered that if one of two papers is marked before dinner, the other after, or one in the morning, the other at night, the teacher's judgment may differ by several per cent, the falseness of such pretenses to accuracy is manifest. The result of a calculation cannot be expected to be more accurate than the data on which it is based.

But any achievement-marks are at best somewhat unfair, as they, in much of the school work, place all pupils with all their varying characteristics and abilities, in competition in one field, and mark them, without consideration of any modifying factors, on their achievements in that field. It matters not that one may be almost a genius in that particular subject, and not give any effort to it, while another may have the least possible taste for it, yet work with the greatest industry and conscientious application. Not

the habits shown or being formed, but the comparative success in returning to the teacher that which she demands, governs the marking.

It is often said that life presents this same condition: that it rewards success only, not the effort made. As an analogy this is a failure, for life allows each of us to find his or her own place, and tests us, so to speak, in groups of our own peers — those with whom we are competing. If life forced each of us to be a carpenter, and gave or withheld success in accordance with our skill in woodworking, it would be a sad time for many of us who are reasonably successful in other fields. Such a condition would build up in us what schools unfortunately often build up in their pupils — a discouraged habit of failure, because of inability to compete on even terms in that particular field. Instead of this, the world needs self-confidence, conviction, the habit and expectation of achievement.

It is the possibility of differentiation, of usefulness in various ways, that makes it possible for those of varying abilities, varying tastes, varying characteristics, to achieve success in their own fields, if they have the requisite qualities. It is this that prevents life from being atrociously unfair.

On the other hand, as I have already said, the school, especially in the elementary classes, has compelled all to try the same work, and then has compared their results only. It is time that attempts were made — such as are now being made in various places — to give credit for effort, for improvement,

for the formation of habits valuable to one's self and to the community.

Many schools are prevented from making such changes by the fear that parents will object. To most parents the success of their children is, rightly enough, their greatest happiness. The only mistake many make is in living for the passing moment rather than planning for the future. It is such parents who start their children in school a little younger than is common, who push them a little faster, who pore over their marks and torture both children and teachers by attempts to force their helpless offspring beyond the capacity with which they are endowed.

Everyone concerned will be happier and better off when a saner way of marking is in force. For primary children at least, subject-marks proper are, I believe, not only unnecessary but a detriment. Children of such ages should be studied as to their development in all lines, including their response to language, to the field of numbers, to human activities of the past and present, to the various means of expression, but the results should be in the form of analyses of the growth of each child instead of in competitive form. Strength and weakness should, of course, be clearly shown; the parents' help should be invited when it is necessary; but there should not be opportunity for comparing Mary's mark in arithmetic with John's, or John's singing with Mary's.

The ideal way is for a parent, at least once a year, to go over such a study of a child with the teacher or supervisor who knows the pupil best; but unfortu-

nately, in our present overcrowded conditions, too few teachers can spare the time for such constructive work.

Marks in the intermediate classes, perhaps up to about twelve-year-old children, might follow much the same method as that outlined for those younger. Parents should receive a summary of the reports on the most important developments going on in their children rather than a long, more or less meaningless list of subject-marks. It is more important to know whether a boy or girl is showing initiative, or attaining self-control, or learning to live and work in harmony with others, than it is to know whether his spelling or writing was marked 76% or 82%.

It is the school's business, of course, to see that a child attains mastery of the fundamentals of learning, and to keep the parents informed as to the normality of his progress in this respect. But that part of the report should not be too detailed; it should not cater to unhealthy pressure and competition, nor should it change school subjects into means of getting high marks instead of fascinating fields in which one's curiosity and interest may roam unafraid and unhampered.

As preparatory schools and colleges are at present constituted, subject-marks for those preparing for college are necessary. They must be achievement marks, so that the colleges may know the degree of success attained by the pupil in each subject. A school can, however, give with each achievement-mark a second mark for the effort or industry shown,

and can by this more fairly praise or blame, if such a course proves necessary. The brilliant lazy boy will then not be spoiled by praise for marks for which he has not worked, but will rather feel ashamed if he has not given of his best.

Some interesting experiments in this line test the mentality of all pupils, and mark the success of each *in proportion to his ability*. It opens an interesting field of speculation as to the improvement in world progress if each one of us lived up fully to his possibilities! Certainly better ways of recognizing success in improving one's self, and the use of marks for analysis and consequent betterment, rather than as artificial rewards, should help in bringing such improvement nearer.

IX

APPRECIATION AND EXPRESSION

MAN'S life would be beggared if appreciation were taken out of it. Each of us enjoys, often without realizing it, beauty in many manifestations. Nature is full of it, with its hills and streams, the blue of the ocean, the sky in its many phases. Music, pictures, sculpture, literature, the drama, are among man's contributions. But there is beauty in a fine piece of workmanship, in a polished piece of wood, in a smoothly running machine, in a thousand forms to which one or another of us responds.

The more widely one appreciates, the fuller his life becomes. When you look away over the hills, do you see simply hills and timber, or do the beautiful lights and shades and almost unseen colorings all combine to delight you? When you turn on the electric light, is it simply a convenience and nothing more, or does it bring a little thrill as you realize the skill with which man has changed the vibrations of electricity into those of light and has tamed them for his use? Do you enjoy not only music or painting but all the forms of beauty that surround you day by day, or do you go your way unseeing, overlooking the harmony in the sounds of the city, the beauty even

in our utilitarian architecture, or in the colorful scenes of the street?

It is possible to make our children matter-of-fact, visionless, or to encourage the eager joy in beauty that is their birthright. But to make them see and enjoy is not a negative task. Beauty is often elusive. It dwells as much in the one feeling it as in the thing sensed.

I had always looked at the landscape; I thought I had seen it. Yet one day when I walked over the hills with an artist friend of trained vision, I learned new beauties, acquired a new feeling for colors I had never sensed before, took back with me a source of pleasure in nature that has grown with the years.

To be bored is an inescapable confession of shallowness: of a lack of understanding and appreciation. One should never show such an attitude to a child, or encourage in him a pride in such a condition. On the contrary, we should emphasize everything beautiful and fine, every achievement of God or man that calls for thankfulness and appreciation, and so add to the child's resources, broaden his contacts, help him into fuller harmony with the world in which he must live and work.

Expression is the contribution each of us makes when he puts himself, his efforts, his thoughts, his feelings, his imagination in some more or less concrete form. A man may express himself in a picture, a poem, a bit of carpenter work, even a skillfully dug ditch. One woman's baking of bread, her arrangement of a room, may for her be an expression of equal

moment with another's novel or piece of sculpture. Those expressions that carry something of beauty or idealism from one to give pleasure and inspiration to others are, of course, the enduring ones.

There is in each one of us the urge for expression. That urge should be given means of realization. It need not be allowed to run wild, or to crowd all else out of place — unless perhaps it is the need of a great genius, who has so much to contribute in one line that he must of necessity subordinate all others to it. With most of us, various avenues of expression, one or more of which may lead toward actual skill, are the rule. Education should open these avenues.

In the older education, when music or drawing entered at all, it was taught as if each child were to become a great artist. Technic was emphasized to a degree that made many hate the subjects, and so often did more harm than good.

A great teacher of painting told me recently that in his lifetime of teaching he had produced surely one — possibly two, real artists. If this is a fair sample, and abundance of testimony confirms it, the arts should be taught in school for appreciation and expression rather than primarily for technical excellence. Children should hear good music, should learn to love it, should express themselves through it. They should see the best possible of the art of line, form, and color, and should have ample opportunity for self-expression in its various forms. Clay is not a fad in school work; it is one of the most valuable media ever found for young children. The pictures

children draw, to illustrate the stories they read or the ones they imagine, are not valuable because they are pretty or seem to show cleverness, but because they provide an outlet that stimulates and gives definiteness to the child's thinking, imagination, and appreciation, and because they satisfy the desire for expression.

Simple technic, in so far as it means a better control of one's means of expression, a training of observation, and an ability to interpret, has an important place, but it is not the dominant factor. Where individual promise of skill or other individual variations call for particular opportunity or particular training, it should, of course, be provided.

Dramatization is a comparatively new form of expression in schools. It bids fair to become one of the most important means of developing language-expression. From the little ones through all the ages of childhood — perhaps I might have omitted the last two words — playing a part is a supremely fascinating form of self-expression. Here, too, imagination takes form and becomes definite, and one's fancy opens the doors to experiences of many kinds. It is not the carefully drilled and possibly artificial production of one play that has the greatest value. It is the day-by-day experience of dropping into a part, imagining one's self under certain conditions and responding to them, that stimulates the imagination, that adds to the ability to put one's self in another's place, that broadens the horizon, that multiplies the means of self-expression.

"Midsummer Night's Dream"
Beaver Country Day School, Brookline, Mass.

That I have mentioned only a few outlets does not mean that I underestimate the importance of the others. When kindergarten children build a house of blocks it is real expression. So woodworking, gardening, a translation made with pleasure and skill, the solution of a problem in mathematics, original writing or speaking in any form — all these and many others should be considered for their expression-values as well as from other viewpoints.

To sum up, the chief aim in the arts, a supplementary aim throughout all school work, should be to broaden and to intensify impressions and appreciation of all that is worth while, and to encourage the fullest expression of the child's self in whatever forms it will take, although in many of those forms we know the expression will never become real skill.

Certainly no child should leave school without some understanding and love for literature, music, and the arts that represent by picture or form. The inspiration that comes through such study is an enduring influence in life.

The following are a few examples of young children's attempts to put their thoughts and imaginings into poetic form. The technic is usually defective, but the expression is often beautiful. While some of these verses are particularly interesting, equally excellent ones are not unusual in any school that encourages such attempts. These examples are from Park School, Baltimore; Public School Number 45, New York City; Beaver School, Boston; Beaver Country Day School, Brookline, Massachusetts;

Unquowa School, Bridgeport, Connecticut; and Pape School, Savannah, Georgia.

Fairy Song

Rowing, rowing, rowing all the day,
On my leaf I float away
And see the birds fly in the sky
While in my little walnut shell I lie,
As still as little boys and girls go by and by.

(*By a child seven years old*)

A Fairy

Mary, Mary found a fairy
In the garden by the dairy.
In the morning when she woke
Then she found it was a joke.

(*Seven years*)

Narcissus

O narcissus, O narcissus,
Sweet thing, you know,
White petals, yellow center,
All growing in a row.

(*Seven years*)

The Pussy Willow Tree

I saw a pussy willow tree,
Growing by the way;
And then it came upon me,
That spring has come to stay.

(*Seven years*)

Books

I

Books about the different things,
Books about the trees,
Books about the fairy tales,
All such things as these.

II

Books about everything,
Things both near and far,
Things as soft as down,
Things as hard as iron bar.

III

Books about wild animals,
(I 'm reading one now,)
The way the bears live up North,
The way the Turkish bow.

IV

I love all books and so
I read at school and home,
And that 's the reason why
I wrote this little poem.

(*Eight years*)

The next was written by a third-grade class (about eight years old). The pupils all wrote about man's efforts to conquer the water, then combined the best of their results in the following form : —

THE WATER RIDER

Oak-Tree rides on the water!
I ride on his back —
I ride — I ride — I do not sink!
I push with a branch,
I go faster!
I tell my Water-Rider where to go —
It goes where I say it shall go.

Wind pushes against the bearskin I hold.
"Away and away and away!" Wind said,
Cedar tree said, "I will stand and stretch out my arms,
And hold the skin for Wind to push."
Now I can fish from my Water-Rider.
Fire said, "I will eat out a hole for fish
So water cannot take them."
Tree, Skin, Wind and Fire — they all work with me.
Sea is a Monster. He has a deep, deep stomach.
But he will not swallow *me*.
He will let me ride on his back,
I shall ride away away and away.
Where —?

The next group is by children from the fourth grade (or about nine years old) through the eighth grade. The age or the grade is given with each.

THE ROBIN

Up in the tree
Where the leaves are so green
Lived a little bird,
The prettiest I 've ever seen.

Brown was her back,
And red was her breast,
And there lived four little birds
In her little, tiny nest.

And when it rains
She shelters her nest,
So that her little ones
Will go to rest.

(*Nine years*)

CHRISTMAS

December, December.
The Christ child is born,
And in the stall the ox and ass
Lay sleeping in the morn,
The Wise Men too are there,
Kneeling in prayer,
And shepherds are kneeling and singing,
Offerings bringing.

(*Grade Four*)

THE CLAY MAN

God took some clay and fixed it
Like a real man;
He blew on it.
When it was done,
He made the clay have life.

(*Grade Four*)

Thanksgiving Day

There is a day that we must remember,
It is the last Thursday in November,
It is Thanksgiving, that famous day,
When all the children romp and play.

And then, they have a very good feast,
Of pie and every kind of beast,
Of cake and buns and cookies galore,
You never saw such a feast before.

(*Nine years*)

My Swing

I have a swing that I love more than anything else.
When my mother wants me to rock my baby.
I run quickly to my swing.
I sing a lullaby to my baby.
Then my baby begins to fall asleep.
Softly, softly I sing,
Until she's fast asleep.

(*Grade Four*)

The Wind

"What makes the wind so strong?" asked John.
"He pushes the waves so quickly on.
If I blew at the sea it would not go,
Is he a strong giant I'd like to know?"

(*Grade Four*)

The Wind

The leaves are gently falling;
The wind is loudly calling;
"Come little bird to the South with me.
Happy and warm all winter you'll be."

(*Grade Five*)

The Sea

The sea, the sea, the lovely sea,
Shining and glittering in the sun!
Different waves in every weather,
They toss! they dance! they jump! they run!

Prancing horses are the waves,
Jumping high with heads of white.
Pretty sea with dark blue waters,
My! you are a pretty sight!

Dark and threatening as you are
When a thunderstorm is near,
Soon the raindrops cease to patter
And the sun shines bright and clear.

(Grade Five)

Song of the Moose

My shadow is cast afar over the gleaming water
By your soft veil of light, oh moon.
I stand on the bank of the mountain's lake,
Still as the trees of the forest,
Listening to the great stillness,
Awaiting the stirring of the sky,
Awaiting the call of dawn.

(Grade Six)

The Disappointment

Once there was a fat man,
He owned a show,
He called the boys
To come to his show.
The boys went up close to hear him,
They forgot school for a few minutes.
He rubbed his hands
And saw his pockets bulging.

As he smoked, through the
Haze he saw money bags,
But the boys suddenly turned and ran
Back to the swimming pool, garden and shops.

(*Grade Six*)

THE STORY OF THE STREAM

Flowing from the mountain's height,
Dashing down o'er rock and boulders,
Rushing on with all its might,
Goes the stream on to the river,
Flowing slowly toward the sea.

Into the ocean wild and stormy,
Flow the waters of the stream,
Once so happy wild and carefree,
Now so sad and dark and dreary,
Is the dashing little stream.

Thus the stream of life is flowing,
First the child so wild and happy,
Then the woman more subdued,
Then the sea of age and darkness,
Thus runs every human life.

(*Eleven years*)

THE FROST

The frost did come, all in the night,
It was a lovely sight
To see the white frost all around,
On roof, on tree, on leaf-strewn ground.

But when the sun did mount the sky,
And ride across the heavens high,
The frost began to disappear,
And melt in dewdrops cold and clear.

(*Eleven years*)

Margaret

Margaret, my little sister,
Is very dear to me.
Her eyes are wonderfully bright,
The color of the deep blue sea.

She has a flashing little smile
Her cheeks are like a rose,
But the cutest feature that she has
Is her little turned up nose.

Her lips are like a cupid's bow
Her hair the darkest brown,
Her heart is as pure as driven snow,
But beware of her anger and frown.

(*Eleven years*)

Spring

Spring is the season that I like best.
It outrivals by far all the rest.
Its trees, its flowers, and fields of pink clover,
Are all signs to tell us that winter is over.
Its bright babbly brook
In a mossy green nook,
The soft breezes that blow
Through the trees, so slow,
Whisper that Spring is near,
Whisper that Spring is here.

(*Twelve years*)

Spring Has Come Again

The warm, bright spring has come at last,
The cold chill winter has quickly passed,
No more wind, no more snow.
Nothing but bright flowers wherever you go.

No more brown leaves, everything green,
And soon we 'll choose our May-day Queen.
Last night the rain came pouring down
And washed the whole big dusty town.

(*Thirteen years*)

FLIGHT

The birds were soaring on the wind
The clouds were blowing in the sky
And suddenly over me there came
A long half-hidden desire to fly.

And with that wish came suddenly
A feeling that made of air was I.
Then up with a leap of heart I flew
To join the leaves and the folk of the sky.

I lay out flat on the raging wind,
The tree tops swished my face.
The wind told me secrets strange and old,
Of a windy sky flying race.

We roved through darkly lowering clouds,
And down the rain did fall.
But I was miles and miles away
Chasing an air-child small.

My heart was wildly beating,
I seemed a child of the wind from birth,
I heard my mother calling to me — I turned —
I was still a child of the earth!

But oh! the glad memory of that dream
I 'll keep forever in my mind.
Till some day I 'll in truth become
A care-free child of the wind.

(*Grade Eight*)

A Joy in Life

I snuggled down into the grass
And still around me tried to keep the night,
But soon, I surely might have known it,
Up crept the sun, that glorious ball of might.

So then I rose with gayness up to greet the morn
And all my out-door friends were shimmering in their soft new light
While quietly over the hills did creep away
That old comrade of mine, the night.

My lips I put down to a dewdrop,
A crystal ball that shone down in a flower.
I looked up at a great oak tree above me
Where sat an oriole in her bower.

Oh, why do not the people who complain that life is dull
Rise up and see a hundred dewdrops shining in the sun,
And if they do they 'll find themselves
That half the joy in life has just begun.

(*Grade Eight*)

X

CHARACTER FORMATION

MANY people still have a feeling that character can be formed only by disagreeable experiences and that, on the other hand, work that is done with interest and pleasure, and discipline that is coöperative rather than simply authoritative, are softening to character instead of creative of strength.

There seems to be a confusion here between the thing that is difficult and the thing that is disagreeable. It is true that one gains strength by overcoming difficulties. It is not true that one necessarily becomes strong by doing that which is simply disagreeable, particularly if the reason for doing it comes not from one's self but from outside force, so that as a consequence it leaves only a determination to avoid that kind of thing in the future.

Many strong characters, it is granted, have come through bitter experiences with increased strength. Very often, however, they have come through with a dourness that is unfortunate both for them and for their companions. The increase in strength that may have come from such conditions seems to be rather from the effort to overcome difficulty than from the unpleasantness. It is not always the bitter medicine that cures the disease!

There is no doubt, nevertheless, that young people should be taught to take pleasure in striving with difficulties and in overcoming them. School work, or any other kind of activity, that can be carried on without effort soon loses both interest and value. The school or teacher, therefore, that wishes to keep the interest of the pupils must of necessity see that they have tasks commensurate with their abilities — ones that seem to them worth doing and that really try the strength of each. These tasks may be both mental and moral, for moral situations requiring self-control, self-sacrifice, moral stamina and moral leadership are frequent in school life. If a pupil becomes accustomed to effort, takes pleasure in achieving, and does it all with a happy, interested, coöperative spirit, he will be having the kind of experience that leads to mental and moral development, and character formation will unquestionably come from it.

There will, naturally, be some duties and obligations that are not pleasant; but if they seem necessary and logical and the child has the strength necessary for them, they will be undertaken with a will.

Many of the tasks that are undertaken with interest, and are carried through because they seem worth while, contain more drudgery and other disagreeable features than any teacher would plan for a pupil. They are done nevertheless, and are done with a will, because they do seem worth while. On the other hand, meaningless drudgery, carried through because one is ordered to do it, arouses resentment and makes

a child neither more ready nor more willing to undertake things for himself.

If it were only possible in disciplinary situations — which need not often arise — always to "make the punishment fit the crime," there would be less rebellion against that phase of authority also, and coöperation would be greatly improved. Impersonal consequences are excellent teachers, and it is difficult to resent them.

I have known a boy who cheated in examination to be called before a committee of his student-mates and told that he had definitely injured the school and lowered its morale. He was asked what he could do to counteract the injury he had done, and after some discussion he offered to go before the whole student-body, confess his fault and give his word of honor never to be unfair again while in the school. This was accepted and the boy went through with the programme. It was the most difficult and the bitterest task he had ever undertaken, but it was a perfectly logical attempt to undo the harm he himself had done. He did it like a man, and the impression upon him, as well as upon those who heard him, was great enough to be of value beyond calculation. Several years later the boy's father said that this experience had been of more help to his son than any other he had ever had.

Pupils who cause unnecessary work in school, either by carelessly leaving their belongings around to be picked up, by being unpunctual at their appointments, or by other such lapses, may be asked to work for the school after each such offense in order in some

degree to compensate for the trouble they have made. This also is recognized as logical, and pupils do it willingly even though they have to give up pleasures that would have occupied the time so used. Clearing the stones off the campus has proved a practical — and healthful — occupation of this kind.

Such examples might be multiplied; this is sufficient to bring out the point that logical consequences are sometimes extremely disagreeable, but that meeting such consequences does not arouse antagonism, and has real value. It is a foretaste of many such situations likely to occur in after life, whereas punishment by an individual is not.

Perhaps the greatest advance that could be made in moral training would be a change of adult viewpoint that would abolish such words as "naughty," "bad," and "immoral." It is true that there occasionally are children whom such words seem to fit. I myself, however, have never known a normal child that some other explanation did not fit more truly. I say "normal" because such habits as those of lying or stealing, when complicated by low mentality or physical abnormality, present different and more difficult problems which I shall not discuss here.

When children are "bad," it is most frequently a fault of training, which is either of the wrong kind, or inadequate.

Wrong training is most likely to be wrong because it is extreme. It is either indulgent or repressive. The first gives a child an extravagant idea of his own importance, fails to impress him with any respect for

authority, and ends by leaving him selfish and inconsiderate, if nothing worse. An indulged child usually means selfish or lazy parents, unwilling to sacrifice themselves to train him. Such parents frequently put themselves in ridiculous positions by their weakness in face of their children's insistence. One father asked the headmaster of a school to excuse his boy for several days in order that he might take a pleasure trip. The headmaster refused definitely and finally. The father then expressed his gratification at the refusal, saying that he knew the boy ought not to go, but he had to promise him to ask for the excuse!

Mothers quite frequently acknowledge that their children do not obey them, and prove it when they ask for obedience before others. I have known a mother, when she called at school for her children each day, to ask a teacher to tell them to go home with her, as the children would not leave the playground at her own request. Another mother, in discussing the bedtime of her six-year-old daughter who was showing nervous symptoms from too little sleep, said, "But what can I do? She won't go to bed."

Repressive discipline, on the other hand, makes a child dread authority, breeds rebellion, and stimulates antagonism and deceit. It is the refuge of the overworked mother with a houseful of children, as well as of overconscientious parents, ignorant of a child's natural reactions. It is unfortunately a very common type of school discipline.

It may be too self-evident to be needed, but the

fact will bear mentioning that nagging, scolding, a sharpened voice, the loss of patience or temper, are not only entirely ineffective weapons for character-training, but are definitely harmful. Sarcasm, too, is valuable only when used by a friend in such a way as to leave no sting in the wound — and that is not easy.

The greatest danger to those who try to train children wisely is that patience or faith may fail under the strain — for there is often strain and trouble when children, knowingly or unknowingly, try themselves out against custom or authority or people, — even their best loved, — and that much that has been gained will be lost through reversion to the methods of weakness, which include angry repression as well as discouraged yielding.

Firm, but sympathetic and understanding, discipline, on the contrary, is respected by children, and can be used to develop self-control, which is normally a valuable and harmless form of repression, and to bring the child into harmony with his surroundings.

Inadequate training seems to me to fail in accomplishing one or more of three things, all of which are necessary for successful character-building.

The first is educating the child in standards of social and moral conduct.

The second, giving him a coöperative attitude toward those standards. This, of course, may easily be prevented by wrong as well as inadequate training.

The third, building up the strength to carry into effect his willingness to live up to the standards.

The one thing that is most often overlooked by both parents and schools is the ignorance of the child in regard to adult laws and standards. It has taken the race many thousands of years to formulate, even as roughly as it has formulated it, the present code of social and moral behavior. It is very easy to expect children to know this code before it has made even a vague impression upon them.

The failure of a growing child to distinguish between truth and imagination, or to appreciate the importance of ownership, are common examples of this. This results from ignorance, not from "badness." It is of the greatest importance that all of those who come in contact with children shall work together to build up consistently their understanding, not only of what is moral, but also of what is fine and idealistic. This cannot be done entirely by precept, but is influenced tremendously by personal example and by the child's own experiences in formulating his own standards and those by which he and his comrades live together.

I have known children as young as seven years of age to discover the need of coöperation in community living. A class of this age had been imagining themselves tree-dwellers and had then passed on to the study of the cave-dwelling period. One day the difference in manner of life impressed them strongly and they said, in their discussion, that if one couldn't get along with the others it wouldn't be so bad if he was a tree-dweller because he could go away in a tree by himself and could do no harm to the rest;

but if he was a cave-dweller he couldn't very well live with the others unless he behaved himself and could get along with them.

And the moral followed fast on the heels of this discovery. For, they said to the teacher, "If any of us cannot live with the others the way we ought to, won't we have to go back and be tree-dwellers again instead of being cave-dwellers?" And she seized the suggestion and answered, "Yes"; and so these children of only seven years judged themselves and each other the rest of the year, attaining cave-dwellership and eventually membership in its "fire clan" only as they proved their willingness to be good citizens of their group.

This was a very definite lesson in standards and codes, and was all the more valuable because it was spontaneous and was formulated and carried on from the experience of the group.

On the other hand, I have known a boy to become a thief, simply because other boys forced him to steal at the age when he should have been learning the importance of property rights. He was educated *for* stealing instead of *against* it. Fortunately it was possible to cure him completely — but not by punishing and blaming him. He had to be reëducated, with a mind directed away from anything that would arouse antagonism and the desire to deceive.

One of the most valuable ways of formulating standards is through free discussion where parents and children, or teachers and pupils, take up moral or social laws in their simplest terms and measure

living by them. In a discussion of honesty, a group of one hundred and fifty or more pupils threshed out such questions as whether it was honest to avoid paying one's street car fare if the conductor failed to collect it; what kinds of help were justifiable in doing home work; and other practical everyday applications. They showed a fine idealism, and although some had failed to make clear distinctions in the past, the group drew the lines in such fashion that even the least educated among them had a better idea of what honesty meant and why it was important.

Such a group one day discussed gambling in relation to various games "for keeps" that had crept into the school body. They started by quoting their parents, — the father who always bet a ball on each hole in his golf match, or the mother who insisted on a stake at whist, — but when the discussion was brought down to a basis of the happiness and advantage of the school group they soon saw their way clearly and voted to abolish all such games for the future.

Standards, even when formed, are of little value unless there is an inclination to live up to them. The manner in which parents and teachers help to form these standards and their way of enforcing them has much to do with this attitude, for it either antagonizes the children, or it invites — and gets — coöperation. The child will not resent sympathetic and understanding authority; but if there is felt an arbitrariness, an unwillingness to explain, or an unreasonableness in not giving the child a full chance

to express his viewpoint, — even though that expression must often wait until after obedience has been given, — there will be built up in him, by resentment or a feeling of competition, a disregard of authority and a desire to evade or overcome it.

The most valuable of all the ways of bringing about this coöperative spirit in school is that of actually using the pupils in formulating their own agreements for conduct and work. When they have planned and tried out the best ways in which they can live their days, they have a different attitude toward such regulations as arise from those plans.

Unfortunately this pupil-participation has been called "self-government," and so has given many a false idea of its scope. Children certainly cannot be self-governing, because they have neither the experience nor the strength for absolute self-dependence.

"Coöperative government," on the other hand, in which all have a part, is both practical and successful. Such a system may vary widely in different schools. In very large bodies of pupils it needs more organization than in comparatively small groups, where overmechanizing is sometimes a cause of failure. It should always be natural and sincere, and should be the outgrowth of genuine good feeling and helpfulness among all connected with the school.

When it fulfills these requirements it is, without question, the best way to bring about the right attitude toward authority and law. One high-school girl, writing about her experience with such a coöpera-

ITH VARIOUS PARTS OF A PROBLEM
Day School, Philadelphia

tive system, said, "It has taught me, not by force or threats, to respect authority."

The strength that enables one to live up to standards can come only from what is inherent in one's self and in the experience one has gone through. It is therefore most important that children should have opportunities to judge and to decide, and even to make mistakes. They should, of course, be sufficiently guided so that they do not go too far wrong, for if they make mistakes too often, there is grave danger of harmful habit-formation. We should not, however, expect more from children than we ever succeed in getting from adults. As a matter of fact, we often do just this. It is quite common for those parents and teachers who complain most bitterly about the lapses of children to be themselves just as careless, tardy, and thoughtless as those whom they criticize.

In this strength-building also the wholesome coöperation between children and their parents and teachers, with a minimum of superimposed authority and a maximum of friendship and teamwork, is the best solution.

I have known class after class, after living under conditions of coöperation, to prove its effect on them by their ability to care for themselves when no teacher was present. Recently a class of nine-year-old children carried on its work for a week while the teacher was sick. The day's programme was posted each morning, and the children organized the work and used the time as conscientiously as any teacher could have wished.

The school of the present is becoming, and the school of the future undoubtedly will be, a genuine democracy. It seems to me likely to have two fundamental laws: one, to be businesslike in one's own undertakings; the other, to be considerate and helpful to all of those who are in one's community. Principal, teachers, and pupils will be equally concerned in having these laws kept, in interpreting them, and in working together for the best good of their communities and for the happiness and development of each individual.

The result of such conditions on the attitude of children was well expressed by the pupils of a school recently when they petitioned the principal, asking that school should not be closed at the end of the year, as they would rather be in school than not. They were working hard, but they were working in cordial comradeship, with interest in what they were doing, and with a real sense of responsibility and of achievement, and they were sorry to give up such a life even for the summer months.

XI

PUBLIC SCHOOL POSSIBILITIES

The question is often raised whether such advances as freer handling of classes, the study of individuals and the adaptation of school methods to their needs, coöperative government, more complete responsibility for the child and his development, are possible and practicable in the public schools.

If not, their discussion, while vital to the many thousands of children in privately controlled schools, remains academic in respect to the millions who must be educated in the public schools.

As a matter of fact, anything can be put into the public schools if it proves worth the price in effort and money. The secondary schools were private academies a few years ago. Now no public-school system is complete without at least one high school. The value of high-school education was so clearly demonstrated in the private schools, and the demand for schooling beyond the elementary years became so insistent, that the public accepted the addition of high schools and now pays the consequent greatly increased cost of education as a matter of course. In fact it is no longer considered unusual when a city spends a million or more dollars to house one such school.

In the same way, if public opinion finally realizes that genuine developmental work is most difficult

to accomplish with from 35 to 50 pupils to each class teacher, smaller classes will become the rule instead of the exception. Public-school classes of from 40 to 50 are now common, of from 50 to 60 are not rare, and I have known of one teacher's being asked to care for 90, another for 110. A high-school teacher recently asked me how he could be expected to study the characteristics of his pupils when he met over 300 different children a week and had an entirely new set each half-year!

It is hard to understand how the public can tolerate, year after year, as it does in many of our cities, such inadequate facilities, with consequent overcrowded classes, often to the extent of forcing part-time schooling for many of the children.

Add faculties of, on the average, mediocre calibre, because of an inadequate supply of those of fine personality and satisfactory training, and it definitely lowers the efficiency of national education, and increases the difficulty of keeping abreast of educational advances.

Nevertheless, despite these handicaps, despite the unfortunate political influences that often juggle with our schools, despite the inevitable inertia and conservatism of large systems, and particularly despite the difficulty of getting public support for what is different, — and therefore dangerous! — the public schools are working along these various lines of improvement, and are accomplishing much that gives great hope for the future.

The experts in the departments of education and

psychology in the colleges, themselves often experienced teachers from the lower schools, are continually experimenting, putting their results in practical form, and so pointing the way to the schools. An increasing number of private schools are acting as scouts for the main army. Those used by the colleges as demonstration or experimental schools have contributed greatly; others, organized and owned by groups of parents and supported for their public purpose as well as for the sake of the children they educate, are proving equally useful. With their flexible conditions, such schools can originate or adopt improvements with a minimum of effort or danger, and can pass on their experiences for the benefit of the larger field.

But the public schools not only are going to other sources for that which they can adopt or adapt for their own uses, they are also, from small towns to large city systems, experimenting and originating in their own classrooms and administrative departments. They probably have a larger direct share in progress than ever before in educational history.

That this is so is a wonderful tribute to the teachers and executives whose vision and love for children persists through all discouragements. I know one public-school principal who even raises each year, by his own liberal gifts and those of his friends, a fund of about a thousand dollars with which to make possible some of the developments that he knows his children need, but which he cannot get through the regular school channels.

I cannot pass this point without emphasizing the

fact that the teachers of the whole country, underpaid as they have been and still are, often working under conditions that make it difficult to bring a smiling face to the morning's work, so often limited in their opportunities for self-improvement and therefore in their breadth of vision and outlook, nevertheless, as a whole, give conscientious, even loving, service to the children. And throughout this army of teachers there are scattered very many with real inspiration. There are sparks of it everywhere, centres in schools, departments, or cities, occasionally those of such vision and leadership that their influence is reaching far and wide, inspiring others to carry on.

I heard one such leader speak something like this: "It is often discouraging. What one builds up is so often torn down by stupidity, by autocracy, by false conservatism. Sometimes I wonder whether it is worth while to struggle so long and advance so little. Then I see a little girl coming down the stairs; she has a smile on her face and a song on her lips, and I know that as long as I live I'll never stop fighting for her and those other children."

Yes, the public school can be a happy place, a free place, a place where each child has a chance. There isn't a thing mentioned in this book that is not being tried, and tried successfully, in public schools. Many city systems have, or are building up, departments of research whose one business it is to study the children of the city, their degrees and types of intelligence, their success in their studies, their possibilities for after school years. Wide-awake principals and super-

intendents are trying out methods of adapting the work to the individual children as they are analyzed by such surveys. This is sometimes done by putting together children of approximately the same intelligence, sometimes by introducing greater flexibility into the handling of each group, sometimes by adopting methods by which each child may work ahead by himself if he is able, sometimes by freer transfer from class to class in various subjects, sometimes by combinations of these and other methods.

With increasing frequency public schools are being equipped with movable furniture — and are encouraging movable children! This is especially true in the younger classes, but it is influencing the entire school. There is constantly increasing use of the so-called "problem method," "project method," "socialized recitation," and so forth, which are simply different names for putting the child into the middle of real situations, and making the classroom a place for self-activity.

The other day I visited a public-school class of children about eleven years old. It was too large a class, — there were over forty children, — neither room nor equipment met the ideal for physical conditions, there was a sparsity of interesting and inspiring material, yet the class was doing really "progressive" work. A child was presiding, and the teacher sat back among the pupils. The chairman called another child to the front of the room and that pupil told the story of a recent experience of his that he thought might interest the others. His

talk was followed by a short discussion. Then another pupil was asked to contribute. They were having "oral composition," but, by whatever name, it was thoroughly constructive practice in the use of language in spoken form, besides contributing other important by-products.

Visit the Natural History Museum, in any city that has one, on a school day, and you are likely to find it thronged with classes that are violating their precious schedules to learn by seeing the actual objects that illustrate their lessons. All over the country classes are going on excursions to places where there are real things from which they can learn. The day may even come when such schedule-destroying trips may succeed in almost obliterating subject-hours and subject-lines, so that children will live their days in important activities, getting much of the subject matter by use rather than by dissociated drill.

One city, at least, is having a large part of its school furniture, such as bookcases, teachers' and office desks, chairs, and so on, made by its pupils in its shops. The pupils principally concerned are those whom tests have shown incapable of doing academic work but able to attain manual skill. They are receiving the education that is adapted to their needs and is most likely to keep them self-respecting members of the community. Other cities are working along this line with varying degrees of completeness. Unfortunately the number of such children is so great that they need more facilities than any school system can yet give them.

One city recently officially adopted the "natural order" multiplication; and inquiries at several important normal schools that train teachers for public schools disclosed the fact that only "shop" subtraction was being taught in them.

Dramatization is finding an increasing place in public schools. Pageants are helping on this movement, and experience with their benefits must automatically increase the impetus. Greater use of visualization and more opportunity for investigation are also quite common. Pupils even paint large-scale maps on the asphalt pavement if they have no place to dig them in the earth on the school grounds; they undertake investigations of local geography, history, plant life, or industries; they help in community projects, from "clean-up" campaigns to investigations of the water-supply.

In moral training and preparation for citizenship there is also real progress. To obtain individual coöperation and participation in a school with thousands of pupils is no easy task. Yet it has been done with remarkable success. It succeeds whenever faith in children is combined with common sense and a reasonably clear idea of child psychology.

Mention of advances in public-school education must be extremely sketchy where such a vast territory is to be covered.[1]

Even such a brief mention of actual advances would

[1] Those interested in a collection of instances from one system should read *High Spots in the New York Schools*, published by the Institute for Public Service in New York City.

be incomplete, however, without a word of the remarkable community-service being given by some of the public schools. Through classes for adults, extension work, lecture courses, and other such means, many of them are markedly improving the public itself, as well as improving its attitude toward schools. This may be done through a state or city system, or by a school or even an unusual teacher. It points the way to a closer relation between the people and their schools, and to a more complete use of existing educational facilities.

All in all, it is not too much to say that the remarkably successful humanized school-work being done in some of our public-school classes challenges comparison with the best being done in private schools having better conditions for such development.

Despite this bright side of the picture — that public schools can do, and that some place or other there is being done, everything worth while that is known — it must not be forgotten that as a whole the public schools are not able to meet present-day needs or to accomplish what their thinking leaders believe they must do to be really adequate. Three main factors hold them back: that part of the public that will not pay the cost, or that fears changes however promising; those executives who are the servants rather than the leaders of the public so may not dare to offend it, or who are themselves afraid to leave the track by which they have reached advancement; those teachers who also have learned how to do things in one way and fear to change. Each of

the three groups is being leavened with progress, but each exists.

A teacher, having taken courses in improved methods of teaching at one of the college summer-schools, — which, by the way, are doing a tremendous amount of the leavening, — wrote to a friend about as follows: "Of course I shall not be allowed to use any of the things I have learned as long as I teach in ——, but perhaps I won't always have to stay there." A principal said, when some of his children made the natural noise that accompanies busy people, "If one of the superintendents heard those pupils making that amount of noise he would report that the discipline of the school was poor, and that the principal didn't even care."

So, while the signs of progress are present, there is a tremendous amount still to be done. It has been proved that the best things can be done in public schools. It rests with the public to decide whether they shall be done there.

XII

COLLEGE PREPARATION

An important consideration — though by no means the most important — in discussing any changes in education is their effect on college preparation and college entrance.

College requirements at one time absolutely dominated the content of courses and the methods of the secondary schools. They still dominate the preparatory schools, and influence tremendously, if they do not dominate, a large proportion of the public high-schools. An increasing number of schools make no pretense of college preparation, so are free to educate their pupils as they think best.

Two results are probably the most important of the ones favorable to college control: the first, that the pupils going to college study in the fields which the colleges believe furnish the best foundation on which to base future study; the second, that college-entrance requirements have set standards to which secondary schools have been forced to attain, and by varying them as conditions have changed, have improved the quality of school work.

College-entrance requirements and examinations do, however, limit the development of the schools. The requirements of most colleges are such as to restrict

preparation to those pupils who are strongly linguistic, by asking for what seems to many an undue amount of language work. It has been quite common, for women's colleges especially, to demand that about two thirds of college preparation should be in languages. Even now many colleges allow not more than one fifth of the preparation to be chosen from outside of languages and mathematics. Perhaps the actual need is for more kinds of higher institutions, and consequently more varied opportunities for those of different mental types. A boy or girl who is not academic, who does not show a rather high result on intelligence tests, or has no taste for the required subjects, has little chance of getting into college now, and little chance of success if ever in. When it is considered that man's advance in civilization comes so largely from two elements, his increasing understanding of and control of his environment, which comes from natural science, and his increasing ability to live with and coöperate with his fellow man, for which social science is the preparation, it does seem that the lack of school emphasis on these two fields comes from tradition rather than from unprejudiced analysis of present-day conditions and needs.

The requirements somewhat fetter the strong teacher also by defining rather closely what shall be read in the languages, or exactly what content shall be taken in other subjects. There is on this account too little opportunity to vary the work to suit different classes or individual needs. Naturally these limitations reach out beyond those actually going to

college and influence the courses of all secondary schools.

Naturally also the fear of college-entrance examinations affects the state of mind of both teachers and pupils and in that way militates against natural and interesting methods of teaching as well as against work differentiated to fit all abilities and types of mind.

Many parents and teachers are in fact afraid of any departure from the most formal drill-methods for fear that it may lessen the effectiveness of preparation for college. I have known a teacher drilling eleven-year-old children to exclaim in surprise, when it was suggested that she should use freer and more interesting methods of handling her classes, "Why, wouldn't that interfere with their college preparation?"

If normal living and learning could not prepare children for college, that fact in itself would prove that college requirements were wrong. As a matter of fact, that is not strictly true.

A pupil who has been taught to get information for himself, to think clearly and to enjoy thinking, to express himself in both oral and written form, and to make decisions and act upon them, has a most valuable equipment for college as well as for any other future use. Schools that are working in a free, happy way are not having, so far as I have been able to find, undue difficulty in entering their pupils in college, and their graduates seem to be making excellent records. One such school, which has sent over

eighty per cent of its graduates to college, has found that many of them finish the college course in three years, while the average standing of the whole group has been unusually high.

Naturally also the interests of children trained in a broader way and taught to love school and school work are much more complete, and should serve as a better foundation on which to build a college education, as well as to give a more general later-life interest. It has been proved over and over again that any subject can be well and interestingly taught not only without sacrifice of fundamental knowledge of it, but instead with greatly increased grasp of its foundation facts and principles. So taught, it prepares a pupil excellently for any reasonable examination, and college-entrance examinations are so safeguarded and studied that they are increasingly reasonable. A teacher should not then make too great a bugbear — to herself or her pupils — of the examination ahead. Certain limitations she must recognize; beyond that she may still be free to teach as well as she can, and the better the teaching, the more it stimulates to investigation and thinking, the more certainty there is of success — even in college entrance!

But even those who have had the advantages of better methods of teaching, and have entered college successfully, have suffered, in the opinion of many educators and parents, from two lacks.

The first is a lack of richness in the curriculum, particularly in the four years preceding college. If a school believes that art, music in various forms,

handwork, — whether industrial art, mechanical art, printing or home-making activities, — public speaking, and other such "non-college" subjects — not to speak of more natural science and social science than is now accepted — should help to broaden the horizon of these years, it is sorely pressed in the attempt to get them into the day.

And if it believes, as an increasing number do believe, that time to investigate, to think, to follow worth-while interests and hobbies to their conclusions, to read about present-day events and problems and discuss them, is part and parcel of real education and should not be crowded out of a child's life by mere "subjects," then it must compromise with its ideals, or fail in college preparation.

I would not, if I could, reduce college-entrance requirements, but I would allow perhaps one fifth of the entrance-credit to come from a school's testimony that the time had been spent in constructive activity, whatever the field, and I would widen the choice of the other four fifths so that any important fields, within certain limitations, might be made major interests throughout the four years of college preparation. The examination would then be designed to test total preparation and power in those fields rather than details of specific ground covered. There are, of course, practical difficulties in such a programme, but I do not believe they are insurmountable.

The greatest, of course, is the fact that so much more varied college curricula would be necessary,

to fit the pupils coming with less standardized preparation.

It must be added that the colleges are deeply concerned about this whole matter and are continually searching for better ways of judging pupils who are sent to them. They are not satisfied with a method that keeps out some pupils worthy of entrance, yet admits others who do not survive the freshman year. Some of the colleges are making use of mental tests to determine the natural abilities of their candidates and are accepting pupils on their success in these tests supplemented by their school records. Others are requiring schools to keep a more complete characteristic-study of their pupils in order to give the college a better idea of whether or not they will fit into college life. New kinds of examinations are also being tried, influenced largely by the type of questions asked in the mental tests and standardized subject-tests.

The College Entrance Examination Board recently authorized the expenditure of a large sum of money in experimenting with different types of examinations, in the hope of finding those that would vary the least in difficulty from year to year and would suffer least in accuracy by occasional slips that even the best pupils make. A possible examination may ask fifty questions, each of which can be answered quickly, rather than six or eight requiring answers of the essay type. Another suggestion is that examiners shall meet all candidates personally and that some examinations shall be oral.

Whatever the future method of college entrance may prove to be, it will undoubtedly be improved in its sureness of diagnosis and will tell more and more certainly whether or not a candidate is ready for college work. The schools that study their pupils, analyze their interests, adapt the work to the capabilities and needs of each, that broaden their horizons and give them pleasure in intellectual pursuits, need not fear such a test. Certainly no teacher needs to deaden her work and antagonize her pupils in order to conciliate the more or less imaginary dragon that guards the college gates.

XIII

A FEW DANGERS

A DISCUSSION of educational tendencies can hardly be left without mention of a few dangers that must be avoided.

To many, a free, interesting school seems to be so near the millennium that it needs neither organization nor system. I can no more imagine an efficient school without plan than I can a human body without a skeleton. But as I do not care to see the bones of the skeleton obtrude themselves on my sight, so neither do I believe it necessary that the organization of a school shall force itself into the foreground in a way to mechanize and institutionalize what should be above all a human thing. Furthermore, the skeleton organization of a school should be a flexible skeleton, supporting, but not too greatly restricting, the motion of the body of which it is a part.

Again, many teachers confuse liberty with license, believing that those of us who wish children to learn to some extent by their own experiences would therefore turn them loose to be swayed by every whim, while we — in the name of liberty — allowed them to form bad habits, to ignore and trample on the rights of others, and generally to destroy instead of building

up. I cannot believe that sincere students of child psychology are ready to subscribe to any such theory. Freedom of choice and of conduct are tremendously important, but they, like anything else, must be used wisely. In this, as in all other fields, a child must learn somewhat by the accumulated experience of the past, which is represented by the adults with whom he is in contact.

Many teachers, also, take it for granted that the fundamentals of learning are necessarily being fixed if a child seems happy in school. Happiness furnishes the best condition for learning, if the child is taking pleasure in mental effort on the thing to be learned. It is quite possible, however, for children to be simply "amused" in school without actually learning any great amount concerning the use of the "tool" subjects that they will need throughout school and life. It is on account of this danger that the standardized subject-tests are proving such a help to teachers who wish to have happy, interested children, yet must assure themselves that definite progress is being made in certain subjects.

Loss of faith is a serious matter. Yet teachers sometimes lose faith when faced with a difficult task, and revert to methods they know to be wrong. It is so hard to keep patience with a slow child, or one who is persistently annoying, that we too often fall back into repressive nagging tactics, trying to tide over the present, even though we gain nothing for the future.

Oversensitiveness and other forms of selfishness, whether in executives, teachers, or parents, are a real

menace. When adults think first of their own dignity, their own comfort, or their own wishes, rather than of the children concerned, that pettiness reacts inevitably on the school or home. Genuine love of children and devotion to their interests are their own safeguard, and their dignity is unassailable.

Above all, no teacher should try to bring about progress by revolution instead of evolution. Education has been building for thousands of years. It carries on its back loads of useless traditions and outgrown theories, but there is too much vigor in it to warrant too drastic treatment. We may cut away a useless part here and there, or recast one part or another, but it should be done with reverence, if without fear. And in making our changes, let us not become obsessed with any one method or system. The limitations of any system, or of the thought of any one man or woman or any group of men and women, are too narrow for the education of a race.

XIV

THOUGHTS FOR PARENTS

In a very few years — a moment in time — you and I and all the others who to-day carry on the life of the world, those who are bearing the burden of civilization with its tremendous projects, its infinite ramifications, its almost godlike control of nature's forces, will be gone, wiped out by that never-ending pestilence — old age. The children of to-day will take our places.

These children came into the world in absolute ignorance. They must advance from a state in which they cannot even distinguish themselves from the objects about them, into one of competence for carrying on the load we must lay down. To do this, they must attain a mastery of all that is in themselves, so that they become tempered and controlled instruments of will; they must have at their command the store of wisdom of the past and present, with the ability to take and to use it; they should know toward what goal the race is striving, and that service, self-sacrifice and willing coöperation are necessary to its achievement.

To change from babyhood to such development is no small undertaking, particularly when it must be

done in a limited time and in accordance with nature's limitations and laws. To provide the right conditions, the inspiration and the training for this development-period is the problem of the home and the school. To do it well is imperative. It is far better to build less hugely, and to provide for the permanence of the structure by the wise training of those who will use it and add to it, who will prepare their successors and again pass it on, than it is to elaborate and expand our physical greatness at the expense of those whose world it soon will be.

Historians warn us that civilizations of the past have fallen back into barbarism when the complexity of the civilization became too great for the intelligence and education of the people. Our civilization to-day is by far the most complex of all the world has seen. The burden of carrying and administering it becomes greater day by day. If preparation for its wise use fails to keep pace, then this civilization too may sink back as others have done, and the race will once more be compelled to start its slow laborious climb toward the light.

To every adult of this generation, then, there comes this challenge: "Are you helping to prepare the finest gift you can leave behind you, that of children greater than their parents, ready to meet their private and public problems bravely and intelligently, trained to achieve nobly, quick to give themselves unselfishly?" If we fail to meet this challenge — "after us, the deluge"!

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